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MINISTRY OF TRANSPORT AND CIVIL AVIATION

REPORT OF THE
MINISTER'S STANDING ADVISORY COMMITTEE

THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

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1957

FOREWORD

I commend this Report, which I fully accept, to all those who are concerned with the transport of dangerous goods and explosives by sea. It is an authoritative and comprehensive work providing the assistance required by the shipping community for the discharge of its obligations under Section 446 of the Merchant Shipping Act, 1894, and the Merchant Shipping (Dangerous Goods) Rules, 1952.

I am indeed grateful to Sir Hugh Watts and the members of the Standing Advisory Committee for the great care and thoroughness with which they have prepared the Report. I am sure that their work will receive world wide recognition as a major contribution to the safety of life at sea, and I am glad to say that they will continue as a Standing Committee to consider the many problems that constantly confront the shipowner, shipper and manufacturer in this field.

This new publication incorporates the material, revised and brought up to date, of the 1951 Report, known in all shipping circles as the "Blue Book". It is, therefore, the new Blue Book and it is presented in this loose leaf form so that the additional or altered entries which the Committee may issue from time to time can be readily attached.

Harold Watkinson

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REPORT OF THE STANDING ADVISORY COMMITTEE ON THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

To The Rt. Hon. Harold Watkinson, M.P.,
Minister of Transport and Civil Aviation

Sir,

1. INTRODUCTORY

(i) We were appointed in May, 1952, by the then Minister of Transport so that the recommendations contained in the 1951 Report of the Departmental Committee on the Carriage of Dangerous Goods and Explosives in Ships might be kept up to date and that the problems connected with the movement of these substances by sea might be fully considered from both the technical and shipping aspects, and your Department advised accordingly. We have held 32 meetings and have recommended that a number of amendments be made to the 1951 Report. Your Department has accepted our recommendations and these have been published from time to time by Her Majesty's Stationery Office as Amendments Lists Nos 1 to 19 inclusive.

(ii) The detailed schedules to the 1951 Report have now been completely brought up to date and incorporate all these amendments and are attached as Appendix B to this Report. The Report of the 1951 Committee is also reprinted for convenience as Appendix E.

2. THE MERCHANT SHIPPING (DANGEROUS GOODS) RULES, 1952

(i) Since the 1951 Report was made the Merchant Shipping (Dangerous Goods) Rules, 1952, have been made and these are reprinted as Appendix A to this Report. These Rules do not in general lay down precise requirements for the packing, marking, labelling and stowage of dangerous goods, but require a proper course of conduct in general terms. We recommend that regard be paid to the Appendices to this Report in interpreting the Rules. The corresponding categories of dangerous goods set out in Rule 2(1) of the Rules have been inserted after the heading of each section of Appendix B.

(ii) Rules 2 to 8 apply to British ships registered in the United Kingdom wherever they may be. In the absence of an international system for the packing, marking and labelling of dangerous goods it is inevitable that British ships in ports abroad may have to load dangerous goods in accordance with the requirements of that particular country, as indeed was foreseen in paragraph 49 of the 1951 Report. Provided the Master is satisfied that the requirements of the foreign port of loading, even if different from those of the Report, do not contravene the United Kingdom Rules, we consider that he would be in order in taking the goods on board.

3. INTERNATIONAL ASPECT

We are of the opinion that it is most desirable to reach international agreement on the transport of dangerous goods and explosives. We have therefore noted with great interest the proceedings of the United Nations Committee of Experts on this subject, and consider that the Report of this Committee forms a satisfactory basis for greater uniformity in the current codes for the transport of dangerous goods. We trust that it may gain wide acceptance amongst other nations and the Authorities responsible for other forms of transport. In this event there are certain items in our Report, such as for example the form of the labels given in Appendix D, which we should then amend so as to come into line with the United Nations Report.

4. PASSENGER SHIPS

(i) We have noted the reservation made by the then Minister of Transport in accepting the 1951 Report that the definition of a "passenger ship" should relate not to the number of passengers actually on board, but to the number the ship is certified to carry. Accordingly the entries in the stowage columns of Appendix B now read "Cargo ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length, whichever is the greater".

(ii) We also note that in accepting the view that a small quantity of ship and aircraft distress signals and shop fireworks may be carried in a passenger ship the Minister decided that when these items are so carried they should be stowed under the personal supervision of a responsible officer specifically nominated by the Master for the purpose. Paragraph 3(*d*) of Section 1 (Explosives) conveys this decision.

5. MARKING AND LABELLING

For the great majority of substances the labels which we recommend are given in column 11 of the schedules, this column being read in conjunction with the specimen labels printed as Appendix D. For some substances, however, we do not recommend any particular label, thus following the practice of the Committee which reported in 1951. Since that date, however, the Merchant Shipping (Dangerous Goods) Rules, 1952, have been brought into force which require in Rule 3, all dangerous goods to be clearly marked with a distinctive label or stencil purporting to indicate the nature of the danger to which the goods give rise. Thus although no particular label may be recommended in this Report, it will nevertheless be necessary for dangerous goods to have a label in accordance with the Rule.

Appendix A

The Merchant Shipping (Dangerous Goods) Rules, 1952

STATUTORY INSTRUMENTS 1952 No. 1977

MERCHANT SHIPPING

DANGEROUS GOODS

Made - - - - 12th *November*, 1952
Laid before Parliament 13th *November*, 1952
Coming into Operation 19th *November*, 1952

The Minister of Transport in exercise of the powers conferred upon him by Section 23 of the Merchant Shipping (Safety Convention) Act, 1949(a) and of all other powers him enabling in that behalf hereby makes the following Rules —

Interpretation

1.—(1) These Rules shall come into operation on the 19th day of November, 1952, and may be cited as the Merchant Shipping (Dangerous Goods) Rules, 1952.

(2) In these Rules, unless the context otherwise requires, the following expressions have the meanings hereby respectively assigned to them, that is to say :—

"Explosive" has the same meaning as in the Explosives Act, 1875(b) ;

"The Minister" means the Minister of Transport ;

"Steamer" includes a ship propelled by electricity or other mechanical power.

(3) Rules 2 to 8 of these Rules apply to—

(*a*) British ships registered in the United Kingdom ,

(*b*) other ships while they are loading cargo within any port in the United Kingdom or within the territorial waters of the United Kingdom.

Rule 9 of these Rules applies to all ships to which Rules 2 to 8 do not apply as aforesaid while they are within any port in the United Kingdom or are embarking or disembarking passengers within the territorial waters of the United Kingdom or are loading or discharging cargo or fuel within these waters.

(4) For the purposes of these Rules, the following shall not be included in the expression "dangerous goods" :—

(*a*) goods forming part of the equipment or stores of the ship in which they are carried ;

(*b*) goods which neither the owner of the ship nor any of his servants or agents knew or ought to have known, or had reasonable grounds for suspecting to be dangerous goods.

(5) The Interpretation Act, 1889(c) shall apply to the interpretation of these Rules as it applies to the interpretation of an Act of Parliament.

Description and Classification of dangerous goods

2.—(1) It shall be unlawful for dangerous goods to be taken on board any ship to which this Rule applies for carriage in that ship unless the shipper of the goods has furnished the owner or master of the ship with a statement in writing of the identity of the goods and of the nature of the danger to which the goods give rise, indicating to which of the following categories the goods belong :—

(i) Explosives ;
(ii) Compressed, liquefied and dissolved gases ;
(iii) Corrosives ;
(iv) Poisons ;
(v) Substances giving off inflammable vapours ;
(vi) Substances which become dangerous by interaction with water or air ;
(vii) Strong oxidising agents ;
(viii) Substances which are liable to spontaneous combustion ;
(ix) Laboratory chemicals and medicinal preparations in limited quantities ;
(x) Other dangerous goods.

For the purposes of these Rules a laboratory chemical or medicinal preparation shall be treated as being in a limited quantity if and only if the quantity of that chemical or preparation is a limited quantity for the purposes of Section 10 of the Report of the Departmental Committee appointed by the Minister of Transport to consider the Existing Rules relating to the Carriage of Dangerous Goods and Explosives in Ships, dated 13th November, 1951.

(2) The master of the ship shall cause a list to be carried in the ship setting forth, in accordance with the information furnished under the foregoing provisions of this Rule, the dangerous goods carried in the ship on the voyage in which she is currently engaged.

Marking

3. It shall be unlawful for dangerous goods, being goods contained in a vehicle, receptacle or package, to be taken on board a ship to which this Rule applies for carriage in that ship unless the vehicle, receptacle or package in which the goods are contained is clearly marked with a distinctive label or stencil purporting to indicate the nature of the danger to which the goods give rise, and if the goods are taken on board the ship at any port in the United

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(a) 12, 13 & 14 Geo. 6 c. 43. (b) 38 & 39 Vict. c. 17. (c) 52 & 53 Vict. c. 63.

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Kingdom or within the territorial waters of the United Kingdom a label or stencil purporting to indicate the identity of the goods.

Where goods are taken on board a ship together with the vehicle in which they are contained, or where goods are taken on board a ship together with the receptacle in which they are contained, being a receptacle which is an additional body for a vehicle and is constructed or adapted for the purpose of being taken on or off the vehicle with goods contained therein, nothing in the foregoing provisions of this Rule shall be taken to require any such receptacle or any package in which the goods in the vehicle may be contained, or, as the case may be, any package in which the goods in the receptacle may be contained, to be also marked.

Packing and Carriage in Bulk

4.—(1) It shall be unlawful for dangerous goods, being goods which are not loaded in bulk, to be taken on board any ship to which this Rule applies for carriage in that ship if the owner of the ship or any of his servants or agents knows or ought to know that the goods are not packed in a manner adequate to withstand the ordinary risks of handling and transport by sea having regard to their nature:

Provided that in any proceedings against an owner or master in respect of a failure to comply with the provisions of this paragraph, it shall be a good defence to prove that before the goods were taken on board the ship

(*a*) the owner or master was furnished with a statement in writing by the shipper to the effect that the goods were packed in accordance with the requirements of this paragraph, and

(*b*) neither the owner nor any of his servants or agents knew that the goods were not so packed.

(2) It shall be unlawful for dangerous goods to be loaded in bulk into any ship to which this Rule applies for carriage in that ship if the owner of the ship or any of his servants or agents knows or ought to know that the goods cannot safely be carried in bulk to the destination to which they are consigned.

Stowage

5. Dangerous goods and any vehicle, receptacle or package containing dangerous goods, taken on board any ship to which this Rule applies for carriage in that ship shall be stowed in the ship, and shall be kept so stowed, in a manner which is a safe and proper manner of stowage for the goods, or, as the case may be, for the vehicle, receptacle or package having regard to the identity and dangerous nature indicated by the markings referred to in Rule 3 of these Rules.

Carriage of dangerous goods in passenger steamers

6.—(1) It shall be unlawful for any explosives to be taken on board any ship to which this Rule applies being a passenger steamer, for carriage in that ship, except

(*a*) any explosive set forth in the First Schedule to these Rules;

(*b*) any explosives the total weight of which does not exceed 20 lb, including their immediate casing or packing;

(*c*) any distress signal rockets for use in ships or aircraft, if the total weight of such rockets does not exceed 1 ton;

(*d*) any shop fireworks.

(2) Any distress signal rockets or shop fireworks carried in a passenger steamer to which this Rule applies shall be stowed under the supervision of a person appointed for that purpose by the master of the ship in writing signed by him.

(3) It shall be unlawful for any dangerous goods set forth in the Second Schedule to these Rules (other than laboratory chemicals and medicinal preparations in limited quantities) to be taken on board any ship to which this Rule applies, being a passenger steamer, for carriage in that ship. Provided that nothing in this paragraph shall prohibit the taking of dangerous goods on board a passenger steamer in respect of which there is in force a certificate issued by the Minister, or by any authority empowered in that behalf by the laws of any country other than the United Kingdom, to the effect that the steamer is fit to carry a number of passengers not exceeding 25 or a number equal to one tenth of the length of the ship in feet, whichever shall be the greater.

Carriage of inflammable liquids

7. It shall be unlawful for liquids which the owner of the ship or any of his servants or agents knows or ought to know to be inflammable to be taken on board any ship to which this Rule applies for carriage in that ship as cargo unless ventilation adequate in the circumstances is provided for the spaces in which the liquids are to be carried.

Carriage of substances liable to spontaneous combustion

8. It shall be unlawful for substances which the owner of the ship or any of his servants or agents knows or ought to know to be liable to spontaneous combustion to be taken on board any ship to which this Rule applies for carriage in that ship as cargo unless precautions proper in the circumstances are taken for the prevention of the spontaneous combustion of such substances.

Application of Rules in certain cases

9. It shall be unlawful for dangerous goods to be carried in any ship to which this Rule applies unless—

(*a*) in the case of a Safety Convention ship, the goods are being carried in accordance with the law relating to the carriage of such goods of the country in which the ship is registered and all the provisions of that law in so far as the same are applicable have been complied with; or

(*b*) in the case of any other ship, the provisions of these Rules which would have been required to have been complied with if the goods had been taken on board the ship in the United Kingdom, have been complied with:

Provided that the Minister may exempt any ship from any of the requirements of these Rules which are required to have been complied with in the case of that ship by virtue of para. (*b*) of this Rule, if he is satisfied that the requirements of the law relating to the carriage of dangerous goods of the country in which the ship is registered have been complied with and are not less effective than the said requirements of these Rules.

Given under the Official Seal of the Minister of Transport this 12th day of November, 1952.

(L.S.)

Gilmour Jenkins,
Secretary of the Ministry of Transport

FIRST SCHEDULE

EXPLOSIVES WHICH MAY BE TAKEN ON BOARD PASSENGER STEAMERS

Ajax Percussion Caps.
Antifyre Percussion Caps.
Battery Pockets.
Bullseye Percussion Caps.
Cardox Heater D.

Cartridge for Martin Cutter.
Cartridges, bolt, cable cutting, linked, punch or rocket
Cases, Cartridge, Capped.
Cases for Turbo-Starter Cartridges (Empty), Primed.
Cordtex.
Curtis's and Harvey's Safety Electric Fuzes
Delay Fuze Assembly (10 Seconds).
Drogue Ejector Cartridges.
Eley Kynoch No 91 Percussion Cap.
Eley Kynoch No. 1A Percussion Cap.
Excelsior Safety Electric Fuzes.
Ferrule Igniter for Safety Fuze.
Flame Detector Cord.
Fuzehead Assemblies.
Hydrox Igniter No. 1 Safety Electric Fuze.
Igniters for Grenades.
Kynoch Fog Signal Caps.
Kynoch No. 41 Percussion Cap
Kynoch No. 70 Percussion Cap.
Kynoch No. 81 Percussion Cap.
Kynoch Rail Car Fog Signals.
M.O C. Cartridges (Type 1).
M.O.C Cartridges (Type 4).
M.O C. Cartridges (Type 6).
Multiple Safety Fuze Igniters.
Nicorro Percussion Caps.
Nobel's Electric Delay Action Fuzes.
Nobel's Safety Electric Fuzes.
Nobel's Safety Electric Delay Fuzes.
Norres Patent Fuze Lighters
Orion Patent Safety Electric Fuzes.
Percussion Caps, O. in C. No. 1.
Plastic Core Safety Fuze
Push Mechanism Type 6.
Pull Mechanism Type 6.
Railway Fog Signals O in C. No 1.
Release Mechanism Type 6.
Safety Cartridge Cases (Empty), Capped.
Safety Electric Primers
Safety Firing Tubes, No. 1.
Safety Fuze, O. in C. No. 1.
Safety Fuze Lighters
Safety Instantaneous Fuze.
Schermer Cattle Killer Cartridges
Special Safety Fuze
Thermal Gas Closing Cartridges.
Trip Fuzes.
Turbo-Starter Primers, Electrically Fired, 15 gram.
Tyre Sound Signals.
Venus Patent Safety Electric Fuzes.
Vulcan Patent Safety Electric Fuzes.
Vickers' Percussion Caps.
Vulcan Patent Electric Delay Action Fuzes.
Any safety cartridges not specified above.

SECOND SCHEDULE

DANGEROUS GOODS WHICH MAY NOT BE TAKEN ON BOARD PASSENGER STEAMERS

Category (ii)—Compressed, liquefied and dissolved gases

Boron Trifluoride.
Carbon Monoxide.
Coal Gas.
Fluorine
Hydrogen.
Ammonia, Anhydrous, unless in cylinders.
Blau Gas.
Butadiene.
Chlorine.
Cyanogen.
Dimethyl Ether.
Dimethylamine.
Ethyl Chloride, unless in cylinders.
Ethylene.
Ethylene Oxide.
Ethylene Oxide/Carbon Dioxide Mixture.
Ethylene Oxide/Nitrogen Mixture.
Hydrogen Chloride
Hydrogen Cyanide, Stabilised.
Hydrogen Fluoride.
Hydrogen Sulphide.
Methylamine.
Methyl Bromide.
Methyl Chloride, unless in cylinders.
Nitrogen Tetroxide.
Nitrosyl Chloride.
Oil Gas.
Phosgene.
Sulphur Dioxide, unless in cylinders or glass syphons.
Trimethylamine.
Acetylene.

Category (iii)—Corrosives

Antimony Pentachloride, unless in containers of 2½ gallon capacity or under.
Antimony Trichloride, unless in containers of 2½ gallon capacity or under
Benzoyl Chloride.
Chloroacetyl Chloride
Chlorosulphonic Acid
Diphenylmethyl Bromide.
Fluoboric Acid.
Fluosilicic Acid
Hydriodic Acid
Hydrobromic Acid.
Hydrochloric Acid.
Hydrofluoric Acid Solutions.
Mixed Acid.
Nitric Acid
Perchloric Acid.
Phosphorus Pentachloride.
Phosphorus Tribromide.
Phosphorus Trichloride.
Phosphoryl Chloride.
Silicon Tetrachloride, unless in containers of 2½ gallon capacity or under
Sludge or Spent Acid.

- Stannic Chloride, Anhydrous.
- Sulphur Chlorides
- Sulphuric Acid, specific gravity exceeding 1·405.
- Sulphuric Acid, Fuming.
- Sulphuryl Chloride.
- Thionyl Chloride.
- Titanium Tetrachloride.

Category (iv)—Poisons

- Bromine and Bromine Solutions.
- Chloropicrin.
- Hydrogen Cyanide.
- Methyl Bromide.
- Motor-Fuel Anti-Knock compounds, unless in containers of 5 pint capacity or under
- Tetraethyl Lead, unless in containers of 5 pint capacity or under.

Category (v)—Substances giving off inflammable vapours

- Benzyl Chloride.
- Carbon Disulphide.
- Enamels, lacquers, paints and varnishes, with a flash point below 73° F., unless in containers of 10 gallon capacity or under
- Di-ethyl-ether, unless in containers of 1 gallon capacity or under.
- Ethyl Chloride.
- Ethylene Oxide.
- Nickel Carbonyl.
- Other substances with a flash point below 73° F., unless in containers of 5 gallon capacity or under.

Category (vi)—Substances which become dangerous by interaction with water

- Aluminium Powder (unpolished), unless in glass or earthenware containers.
- Aluminium Silicon, in powder form.
- Barium Alloys, non-pyrophoric.
- Barium Metal.
- Calcium Metal and Alloys, non-pyrophoric.
- Calcium Carbide.
- Calcium Phosphide or articles charged wholly or mainly with Calcium Phosphide.
- Calcium Silicide.
- Calcium Silicon.
- Ferro-Silicon containing 15 per cent. to 80 per cent. Silicon, both figures inclusive.
- Magnesium Alloy Powder, unless in glass or earthenware containers or in tins or cans.
- Potassium Metal.
- Sodium Metal.
- Sodium Phosphide.
- Strontium Alloys, non-pyrophoric, unless in glass or earthenware containers.
- Zinc Phosphide.

Category (vii)—Strong Oxidising Agents

- Potassium Bromate.
- Sodium Bromate.
- Ammonium Chlorate.
- Barium Chlorate.
- Potassium Chlorate.
- Sodium Chlorate.
- Strontium Chlorate.
- Zinc Chlorate.
- Chloric Acid.
- Calcium Chlorite.
- Sodium Chlorite.
- Guanidine Nitrate.
- Ammonium Perchlorate.
- Barium Perchlorate.
- Calcium Perchlorate.
- Lead Perchlorate.
- Magnesium Perchlorate.
- Potassium Perchlorate.
- Sodium Perchlorate.
- Ammonium Permanganate.
- Hydrogen Peroxide Solutions greater than 6 per cent. strength.

Category (viii)—Substances which are liable to spontaneous combustion

- Cotton, wet.
- Diethyl Zinc.
- Di-methyl-p-nitrosoaniline.
- Fibres, burnt, wet or damp.
- Fishmeal or fish scrap, unless in sealed metal containers.
- Iron Oxide, spent.
- Linoleates, resinates and other driers in solid form.
- Phosphorus, white or yellow.

Category (ix)—Other Dangerous Goods

- Ammonium Picrate, wet
- Benzoyl Peroxide.
- Celluloid in the form of scrap, dust, shavings, pieces or stripped film.
- Di-nitro-ortho-cresol, wet or fused solid
- Di-nitro-phenol, wet.
- Dinitrophenolates
- Di-nitro-resorcinol, wet.
- Hessian bags, used (unless continuously used for inert material).
- Lacquer base and chips with nitrocellulose base.
- Nitrocellulose, wet.
- Picric Acid, wet.
- Sodium di-nitro-ortho-cresolate, wet.
- Sulphur (Lump, roll or stick), unless in glass or earthenware containers, or in drums, casks, cases or double hessian bags
- Sulphur (powder), unless in glass or earthenware containers, or in drums, casks or cases
- Zirconium Metal.

EXPLANATORY NOTE

(This Note is not part of the Rules, but is intended to indicate their general purport)

These Rules regulate in the interests of safety the carriage of dangerous goods in

(a) British ships registered in the United Kingdom ; and

(b) other ships when in the ports or territorial waters of the United Kingdom, and in particular make provision for the proper marking and stowage of dangerous goods The Rules include requirements which appear to the Minister of Transport to implement the provisions of the International Convention for the Safety of Life at Sea, 1948, relating to the carriage of dangerous goods

Appendix B

Recomendations for the Carriage of Dangerous Goods and Explosives in Ships

PART I

PREAMBLE

1. The goods specified in the Sections, with the exceptions therein mentioned, are dangerous and should be packed, labelled and stowed in accordance with the instructions contained in the Sections

2. The Recommendations contained in this Part I are the General Recommendations which must be observed for dangerous goods which are carried on board ship. The particular Recommendations applicable to each individual substance will be found in the appropriate sections in Part II.

3. Dangerous substances are classified according to their main characteristics and properties in Part II. There are ten sections Substances which possess properties fitting them for inclusion in more than one section have been placed in the section appropriate to the most dangerous property from the point of view of carriage in ships, but the Recommendations for packing and stowage have been drawn up with due regard to the whole of the properties. A comprehensive index is provided.

4. These Recommendations do not apply to mixtures or solutions containing substances specified as dangerous unless the mixture or solution is such as to constitute a dangerous hazard.

5 Every effort has been made to make the list of substances specified in Part II as comprehensive as practicable, but the non-inclusion of any substance possessing dangerous properties, does not relieve the shipper from responsibility under Section 446 of the Merchant Shipping Act, 1894, for declaring the nature of the substance, and under common law for any damage caused through default.

6. All goods should be regarded as dangerous, the carriage of which may, by reason of their properties, involve risk to the ship or to the persons on board Details should be submitted to the Ministry of Transport and Civil Aviation when it is desired to ship any substance not included in Part II and thought to possess properties which are dangerous

7. The methods of packing and stowage laid down in Part II are not necessarily the only ones which may be permitted. Full details of any other methods which will ensure equivalent protection should be submitted to the Ministry of Transport and Civil Aviation.

8. In the Recommendations for packings and stowage detailed in Part II, consideration has been given to the properties of substances and to the possible reaction with other substances with which they may be stowed, as well as to outside influences such as rough handling or high temperature, to which the goods may be exposed

DEFINITIONS

9. For the purpose of these Recommendations the following expressions have the meanings indicated against them :—

Under deck means in a hold or in a covered space which is enclosed between steel bulkheads, and is capable of being effectively closed against the weather

On deck means other than under deck, as above defined.

On Deck only means in an uncovered space, though special deckhouses, having doors which can be continuously open (except in heavy weather), may be used. " On deck only " does not include stowage in a shelter deck space.

> *Note.*—Deckhouses and masthouses can be considered suitable for either on deck or under deck stowage.

A shelter deck space is the space contained between the shelter and freeboard decks.

Tropical Voyages. Tropical conditions are assumed to exist between the parallels of latitude 30° North and South. Cargo carried on any vessel bound to or from a port in or likely to pass through this area must be packed in accordance with the Recommendations laid down for " Tropical " conditions

Stowage in relation to living quarters—

Definition (A)—Stowage must not be in a compartment immediately underneath living quarters, unless the deck extends unbroken for a distance of 8 feet from the boundary bulkhead of such quarters.

Definition (B)—Stowage must not be in a compartment any part of which is immediately underneath living quarters

Hermetically Sealed.—A container may be regarded as hermetically sealed if it is so constructed and secured that it is for practical purposes airtight and will maintain its airtightness under all usual conditions,

Effectively Closed.—A container may be regarded as effectively closed if it is so constructed and secured that it is for practical purposes watertight and will maintain its watertightness under all usual conditions.

Minimum Air Space (Ullage).—The percentage indicated in the Schedule, or the percentage calculated by use of the formula specified, means the percentage of free space to be left in a container in relation to the total capacity of the container,

Suitable in relation to packing or to containers means :—

(*a*) well constructed and in good condition ,

(*b*) of such a character and construction that any interior surface with which the contents may come in contact is not dangerously affected by the substance being conveyed ;

(*c*) capable of withstanding the ordinary risks of handling and transport by sea ;

(*d*) capable of withstanding any pressure likely to be generated therein.

Effective.—Effective in relation to absorbent material means material of a nature capable of minimising the hazard of the liquid conveyed, and so disposed as to prevent movement and to ensure that the inner container or containers remain completely surrounded under all ordinary conditions of transport, and, where reasonably possible, of sufficient quantity to be capable of absorbing the liquid completely in the event of breakage of the container.

Combustible Cargo.—When this phrase is used it does not include dunnage in actual use in the stowage of the cargo. Due regard should be paid to the combustible nature of certain protective packing such as straw, wood shavings, bituminised paper and felts used for the packing of cargo.

Drums.—For the purposes of these Recommendations the terms " drums, barrels, casks or kegs " are regarded as synonymous.

Fibreboard.—For the purposes of these Recommendations the term " fibreboard " is deemed to include " plywood ".

Steel.—For the purposes of these Recommendations " steel " includes " iron."

" **Inflammable** " and " **Flammable** " are synonymous terms.

LABELLING OF PACKAGES

10. Before any packages of dangerous goods for which a label is stipulated are taken on board ship they must be marked conspicuously on the outside according to the nature of the contents as shown in the following classifications :

(i) Substances giving off inflammable vapours	
(*a*) Flash point below 73° F.	Label A1
(*b*) Flash point 73°–150° F.	Label A2
(ii) Gases possessing a fire risk	Label A3
(iii) Fireworks (shop goods)	Label B
(iv) Poisonous substances	Label C
(v) Corrosive substances	Label D
(vi) Combustible substances	Label E
(vii) Oxidising substances	Label F
(viii) Substances which react with water	Label G
(ix) Substances which react with air	Label H
(x) Medicinal or laboratory chemicals in limited quantities	Label J

The labels must conform with those given in Appendix D, pages 228 and 229 and they must be secured to the packages by such means that under the normal conditions of transport they will not become detached during transit. Alternatively, a replica of the appropriate label may be stencilled on the package.

11. The label, if recommended, is indicated in the appropriate column against each substance.

12. Packages of explosives must be marked as laid down under Section 1 of Part II.

DECK STOWAGE

13. **Limitation of Quantity.**—The total amount of dangerous goods carried on deck may not occupy more than 50 per cent. of the total open deck area. Within this limitation there is no restriction on the quantity of any individual substance except where provided for in Part II

ABBREVIATIONS

Gram	g.	(singular and plural)	
Kilogram	kg.	" " "	
Ounce	oz.	" " "	
Pound	lb.	" " "	
Hundredweight	cwt.	" " "	
Inch	in.	" " "	
Foot	ft.	" " "	
Gallon	gal.	" " "	
Pint	pt.	" " "	(unofficial)
Litre	L.	" " "	
Flash point	fl. pt.		
Specific gravity	sp. gr.		
Centigrade	C.		
Fahrenheit	F.		

PART II

SECTION 1

Conveyance of Government, Visiting Forces and Commercial Explosives in Ships

(Category (i) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

SUB-SECTION A

This Section applies to the carriage of Government, Visiting Forces and Commercial explosives as cargo in merchant ships on commercial voyages.

1. Definitions

In this Section the following definitions are applicable :—

An " explosive " is a substance used or manufactured with a view to produce a practical effect by explosion or a pyrotechnic effect, or any other substance which has been required by the Administration to be treated as an explosive. The term includes all items listed in sub-sections B and C of this Section.

A hold is a space contained between two permanent bulkheads.

A 'tween deck space is a closed space between two consecutive continuous decks and bounded by permanent bulkheads.

A shelter deck space is the space contained between the shelter and freeboard decks.

A compartment is (*a*) a lower hold, or (*b*) a cargo space bounded by permanent bulkheads at each end, and having decks with closed hatchways above and below. An insulated chamber, even though situated in a compartment as defined above, may be considered to be a separate compartment, provided that each chamber is surrounded by a steel bulkhead. A deckhouse or a masthouse can be considered to be a separate compartment.

An explosives ship is one carrying any of the explosives mentioned in subsections B and C, other than (*a*) those explosives defined in paragraph 3, or (*b*) quantities of lachrymatory stores carried on deck and not exceeding 10 cwt. gross.

2. Tankers

Save in exceptional circumstances, and when no oil having a flash point lower than 150° F. is being carried, and under the special authority of the Ministry of Transport and Civil Aviation, no explosives other than those in Group 13 may be carried in oil tankers. Explosives in Group 13 may be carried, provided the stowage space has been thoroughly cleansed and certified gas free, and is effectively sealed off or ventilated as specified in paragraph 25 (*h*)

3. Passenger Ships

For the purposes of this Section a passenger ship is defined as a ship carrying more than 12 passengers. Except as provided below, explosives other than the following may not be carried in passenger ships :—

(a) Explosives of Class VI, Division 1, and those defined as safety class in Group 6.

(*b*) Small quantities of other explosives, excluding items in Group 10, not exceeding 20 lb. gross in the aggregate, provided suitable stowage accommodation is available. See paragraph 17 (*e*).

(*c*) Small fireworks, namely, those which are not likely to explode violently and are the " Shop Goods " defined by the Home Office (Order in Council No 16A dated 11th May, 1906, made under the Explosives Act, 1875). (See page 25.)

(*d*) Ship and aircraft distress signals and apparatus not exceeding 1 ton gross

Any shop fireworks or distress signal rockets carried in passenger ships shall be stowed under the personal supervision of a responsible officer specially nominated by the Master for the purpose.

Provided that the Ministry of Transport and Civil Aviation may permit the carriage of other explosives in a passenger ship in which special approved safety measures are taken, subject to compliance in all respects with the stowage regulations.

4. Lightning Protection

In ships carrying explosives, efficient lightning conductors are to be fitted to wood masts and top masts, also to steel masts where electrical conductivity of the rigging is defective. In steel ships, steel masts must be bonded to the hull, or lightning conductors fitted.

5. Authorised Explosives

Only the following explosives may be carried :—

(*a*) explosives authorised by the Home Office,

(*b*) explosives approved by a Government department,

(*c*) explosives of a visiting force in the U.K. which have been given a U.K. classification

Classified lists of Government, visiting forces and commercial explosives are given in Sub-Sections B and C of this Section. Throughout these Rules the term " Government explosives " includes visiting forces explosives the word " Group " applies to Government and visiting forces explosives, and the words " Class " and " Division " commercial explosives.

6. Two or More Services

Government explosives belonging to two or more Services and comparable types of commercial explosives may be stowed together.

7. Protection Against Weather

Special care must be taken during loading and unloading to prevent packages containing explosives being wetted by rain, snow, etc., as their contents may readily become unserviceable. Sunlight has a deleterious effect on explosives either loose or in packages, and protective covering should be provided to prevent direct sunlight falling on the packages for any length of time.

8. Security

Special measures must be taken by the Master of the ship at loading and unloading ports and also at any intermediate ports where the holds containing explosives have to be opened, to ensure the security of the explosives carried in the ship. Small arms ammunition, grenades and similar small articles need particular attention to prevent pilfering, whilst bulk explosives, bombs, etc, require to be guarded against sabotage. The responsibility for the security and safe handling of the consignment rests with the Master of the ship, and a responsible ship's officer must be present when the hatches are off. All explosives must be tallied into and out of the ship

9. Authorised Representative

The loading and unloading of Government explosives in ships will in all cases be conducted in the presence of an authorised representative of a service or supply department, or of a visiting force in the U K., who will observe the manner in which the explosives are being handled and stowed, and, if necessary, will call the attention of the ship's officer responsible for the operation to any instances of improper treatment, for the purpose of avoiding damage or danger through careless or unsafe handling and stowing The responsibility of the Master for the safe handling and stowage of the explosives is in no way affected by the presence of the Authorised Representative.

10. Locking and Sealing Magazines

Magazines shall always be locked when work is suspended for any reason and when the loading has been completed. When Government explosives are carried the Authorised Representative will be responsible for this duty and also for the delivery of the keys to the Master under sealed cover The Authorised Representative will also be responsible for ensuring that the construction, sealing and ventilation of special magazines or containers for Government S A S explosives is efficiently carried out. In the case of commercial explosives the responsibility rests with the Master.

11. Notice of Loading and Unloading of Government Explosives

The Government Shipping Agents are responsible that adequate notice of loading is given to the Service Department concerned to ensure the Authorised Representative being present before loading begins The Ship's Agents are responsible for ensuring that adequate notice of unloading is given to the Service Department concerned to ensure the Authorised Representative being present before unloading begins.

Magazines containing Government explosives may not be opened before the arrival of this officer, and other Government explosives stowage should not be disturbed before he has inspected it. Should exceptional circumstances make it necessary for magazines to be opened, or the stowage of other explosives broken, before his arrival, the Master must inform him and, if necessary, forward a report of the circumstances to the Owners for transmission to the Ministry of Transport and Civil Aviation.

12. Marking and Sealing of Packages

Each package containing Government explosives bears a Government Explosives label, indicating the Service Department to which it belongs and the storage Group, Sub-section B. The label may be replaced by a brand or stencil conveying the same information. The label, brand or stencil is placed in a conspicuous position, usually on the side of the package. (See Sub-section E) In addition, each package has one or two Station Monogram or Inspection labels pasted over the junction of lid and body to form a seal, so fixed that it is impossible to remove the lid without breaking one of the seals In some cases packages are sealed with metal seals bearing appropriate identification markings Packages having broken seals should be examined and should not be loaded in the ship unless the Authorised Representative is satisfied that they are safe If found correct they should be resealed, before loading, with fresh seals provided by the Authorised Representative. Loose bombs, shell, mines, etc., are not labelled.

Commercial explosives must be packed and marked to comply with the conditions laid down in Sub-section C. The classification markings on packages of commercial explosives will be those required by the Explosives Act, but to facilitate identification of the proper method of stowage, etc., Sub-section C includes a list of commercial explosives with the Home Office classifications and equivalent service storage groups together with the stowage code letters.

13. Doubtful Explosives

Government explosives whose condition has been certified as doubtful by a Service Inspecting Officer will only be carried in ships under the authority of the Service Department concerned, and must not be stowed in a hold containing other explosives or inflammable materials.

14. Defective Packages

No leaky or badly coopered barrels or defective packages containing explosives should be received on board, and should such be offered for shipment the Master should refuse to receive them and should immediately report the circumstances to the shippers, or if Government explosives to the Authorised Representative.

15. Opening Packages

Packages containing explosives in transit must not be opened on board ship.

16. Safety Precautions

(a) *Artificial Lighting*

When explosives are being loaded or unloaded, and when work is in progress in a hold where there are explosives, the hold shall be lighted, when necessary, by "totally enclosed" lights When Group 15 explosives are involved the lights should be of the "flame-proof" type If the covers on lights are of glass they must be protected by a wire mesh. Arc lights must not be used Lights are not to be suspended over explosives when it can possibly be avoided All fittings and flexible cables used for portable lighting will be so sited, and additional mechanical protection afforded where necessary, so as to guard against damage Flexible cables will be of the "Tough Rubber Sheathed" type. All lighting must be examined for serviceability by a responsible ship's officer before work commences.

(b) *Wireless Working*

Except in an emergency, wireless transmissions (R/T or W/T) from a ship loading or unloading explosives are only permitted provided the output used for transmission does not exceed 50 watts. Metric wave radar transmitters are not to be used. Centimetric radar transmitters are not to be used if the aerials are within 100 feet of the explosives. In an emergency the use of any available communication system of this type should be an acceptable risk.

(c) *Bunkering*

Explosives scheduled for M S.A., M S.B., M.S D. or M.S.L. Stowage (Paragraph 22) must not be loaded or unloaded whilst bunkering with either coal or oil is in progress

Bunkering should not be carried out when working other types of explosives or whenever the hatches of the explosives stowage compartments are off, unless adequate precautions are taken to prevent coal dust or oil vapour reaching the explosives stowage space (*d*) *Repairs*

(i) No repair work of any kind shall be carried out in a hold of a vessel if that hold contains explosives.

(ii) Repair work which involves welding, burning, riveting or any other operation creating a risk of fire shall not be carried out on board any vessel when explosives are on the vessel.

(iii) Provided that any such repair work as is mentioned in sub-paragraph (ii) may be carried out if the Harbour Authority considers that circumstances of urgency make it necessary for such work to be carried out and specially authorises the carrying out of that work. In that case the owner of any vessel on or to which any such work is to be carried out, or the Master of any vessel, or any other specially authorised representative of the owner of such vessel shall be responsible for ensuring that any requirements of the Bye-Laws of the Harbour relating to the carrying out of such work are observed. For regulations regarding repair work on vessels containing Government explosives, see the "Conveyance in Harbours of Government Explosives and Explosives of Visiting Forces Regulations, 1956."

(*e*) *Smoking*

No person shall smoke whilst engaged in handling or moving any explosive or whilst in the vicinity of any explosive.

(*f*) *Fire Fighting*

Fire fighting appliances shall be arranged on shore to the requirements of the "Notes for Guidance on Fire Fighting in Harbour Areas when Government Explosives are conveyed" and on board ship to the requirements of the Ministry of Transport and Civil Aviation, to deal promptly and adequately with fires occurring in the dock in which or on board the vessel in which the explosives are being conveyed. Hoses shall be kept rigged and all other available fire fighting appliances on board such vessels and in the dock shall be kept ready for use whilst any explosives are within the harbour.

17. Position of Stowage

The position on board ship for the stowage of explosives will be selected in accordance with the following principles :—

(*a*) The coolest position possible must be used.

(*b*) Explosives will normally be stowed in a lower hold or 'tween deck space, except as provided in (*c*), (*d*) and (*f*). Certain explosives are, however, permitted to be carried on deck (paragraphs 25 (*j*) and 26).

(*c*) A poop may be used, whether or not included in the gross tonnage; if not so included, the tonnage openings are to be efficiently closed. Explosives must not be stowed in a poop in which the crew are accommodated or ship's stores are carried.

(*d*) A bridge space or shelter deck space other than that abreast the engine and boiler casings may be used provided that :—

(i) The space used for explosives is efficiently bulkheaded off at least 1 foot from the engine and boiler casings and from the coal bunker hatches or hatches of a hold containing coal, if any. In either of these latter cases the bulkhead must be made gas tight.

(ii) Only suitable cargo is stowed in adjacent spaces.

(iii) The space contains no living accommodation or ship's stores.

(iv) A shelter deck space is permitted for the stowage of S.A.S. explosives under the conditions of paragraph 25 of this Sub-section.

(*e*) Explosives other than those of Class VI, Division 1, small fireworks ("shop goods") or those defined as Safety Class in Group 6 must not be stowed immediately underneath living accommodation in the vertical plane and must be separated in the horizontal plane from such accommodation by a permanent watertight bulkhead.

(*f*) Insulated spaces in ships may be used for the stowage of explosives subject to the requirements of paragraph 25 concerning S.A.S. explosives. When explosives requiring M.S.A., M.S.B. or M.S.L. Stowage (paragraph 22) are stowed in such places, all pipes and steel work are to be close lined or sparred, as specified in Sub-section D.

(*g*) Fixed magazines may be erected on suitable cargo provided this is properly levelled off.

18. Conditions of Stowage

The general conditions of stowage, applicable to all types of explosives, are as follows :—

(*a*) The stowage space for all explosives, other than S.A.S. and P.X.S. explosives, must be dry and well ventilated, and all ventilation shafts leading into the stowage must be protected by fine mesh double gauze guards. For special conditions of the stowage necessary for S.A.S. and P.X.S. explosives, see paragraphs 25 and 28.

(*b*) Magazines and stowage spaces must be clean and free from grit, dust, oily waste and rubbish.

(*c*) Non-explosive cargo may be stowed in the same compartment as explosives but dangerous goods may only be stowed in a ship carrying explosives in accordance with the requirements of paragraph 33.

(*d*) Ships carrying explosives should normally use sand or other inert material for ballasting. If sand or other inert material cannot be obtained, colliery slag or refuse may be used but explosives should preferably not be stowed in the hold where such ballast is used.

(*e*) The magazine or stowage space must be completely closed to traffic whilst at sea.

(*f*) All explosives must be carefully handled and stowed. They must be well secured to prevent movement.

(*g*) Unauthorised persons must not be permitted access to the spaces in which the explosives are stowed.

19. Passengers' Baggage and Post Office Mail

No explosives may be carried in a compartment containing passengers' baggage or Post Office Mail.

20. Approval of Stowage Space for Government Explosives

The position selected by the Government Shipping Agents in conjunction with the owners for the stowage of Government explosives and the construction of any magazines required must have the approval of the Authorised Representative concerned with the consignment. The Authorised Representative is responsible that magazines and stowage places are thoroughly clean as laid down in paragraph 18 (*b*) before the loading of explosives commences.

21. Types of Stowage and Code Letters

The following Table shows the types of stowage prescribed for explosives and also the code letters used in Sub-sections B and C to indicate the type of stowage required for each item.

Type of Stowage	*Code Letters*
Magazine Stowage " A "	M.S A.
Magazine Stowage " B "	M S B
Magazine Stowage " Lead free "	M.S L.
Magazine Stowage " D "	M.S.D.
Ordinary Ammunition Stowage	O.A.S.
Pyrotechnic Stowage	A.S P.
Special Ammunition Stowage	S.A.S
Petrol Stowage Special	P.X S.
Deck Stowage Only	D S O.
Unclassified Stowage	U C.S.
Optional Deck Stowage	(D)
Above Coal Stowage, if necessary	(C)
Respirators to be provided (see paragraph 38)	(R)

22. Magazine Stowage

M.S.A Explosives requiring this type of stowage are mainly in Group 1 and Classes I, II, III, IV and VI, Division 2. They require a close lined magazine as described in paragraphs 4 to 17, 21 and 22 of Sub-section D.

M.S.B. Explosives requiring this type of stowage are mainly in Groups 2, 3 and 4 and Class III, Divisions 1 and 2. They require a sparred magazine as described in paragraphs 18 to 20, Sub-section D. When Group 3 explosives are stowed close to Shipping Category C explosives, they must be assumed to share the mass explosion risk appropriate to Category C. Where the additional risk is material, they should be separated if practicable from Shipping Category C explosives by the boiler and engine room space or by an intervening hold. (See note 14 on page 20).

M.S.L. Explosives requiring this type of stowage are included in Groups 1, 2, 3, 4 and 10 and Class III, Division 2, and if contaminated by lead in any form may become extremely sensitive and dangerous. They must therefore be kept under " lead free " conditions. For this reason, in addition to requiring the close lined magazine specified for M.S.A. explosives, the roof also should be close lined. When the latter is not practicable, the packages will be covered by a " lead free " fabric sheet, e.g. a closely woven linen or cotton sheet.

M.S.D. Explosives requiring this type of stowage are usually in Group 10 and Classes V and VI, Division 3, and are somewhat sensitive to shock. They require a magazine as described in paragraphs 23 and 24, Sub-section D. If a suitable locker is available it may be used as a detonator magazine. M.S.D. magazines or lockers must be situated as least 8 feet from the ship's sides.

Notes.—1. A portable magazine, not exceeding 2 tons measurement, may be used for any of the above explosives, see paragraphs 25 to 27, Sub-section D.

2. M.S.B. explosives may be stowed in a close lined magazine either alone or with M.S.A. explosives.

3. M.S.B. and M.S.A. explosives may be stowed in an M.S.L. magazine with or without M.S.L. explosives.

4. Explosives in Group 6 marked as belonging to the Safety Class and those in Class VI, Division 1, may be placed in an M.S.D. magazine or locker with M.S.D. explosives. No other explosives may be stowed therein or in the same compartment.

23. Ordinary Ammunition Stowage. O.A.S.

Explosives requiring this type of stowage are in Groups 5, 6, 7, 7A and 8, with isolated items from other Groups, and in Class VI, Divisions 1, 2 and 3. Magazines are not required. Stowage is to be arranged in accordance with paragraphs 17, 18 and 32. These explosives may be stowed in the same compartment as M.S.A., M.S.B. (except as in paragraph 22) or M.S.L. explosives. They may be stowed with other cargo subject to the requirements of paragraph 33 concerning dangerous goods. These explosives may, if necessary, be stowed above ordinary cargo, but overstowing (stowing on top) of Government explosives requires the formal approval of the Authorised Representative and must be confined to cargo not liable to contaminate or damage the explosives. Cordtex and Aircraft bombs of the Smoke type, clustered incendiary bombs or clustered H.E. bombs must not be overstowed.

Note.—Smoke Generators and Smoke Grenades (Group 11 series) should be stowed, whenever possible, in a separate compartment. If this is not possible they should be stowed only with O.A.S. explosives of Group 11.

24. Pyrotechnic Stowage. A.S.P.

Explosives requiring this type of stowage are in Group 9 and Class VII, Division 2, and are somewhat susceptible to damage in transit. They must not be overstowed (i.e. have other cargo stowed on top) or placed in the same compartment as other explosives except those in Group 6 marked as belonging to the Safety Class and those in Class VI, Division 1. Magazines are not required. The conditions of paragraphs 17, 18 and 32 apply. Pyrotechnic explosives may be conveyed as deck cargo provided they are suitably stowed in a waterproof portable container of the types A or B.

25. Special Ammunition Stowage. S.A.S.

Explosives requiring this type of stowage are in Groups 12 and 13 with a few items in Group 11 ; the first named may ignite spontaneously if a defective package permits leakage, whilst others contain chemicals which may cause harm should leakage occur. The items in Class VI, Division 3, marked " S.A.S." are also in this category. Their stowage calls for great care and requires suitable provision for dealing with " leakers ". The following rules must be observed :—

(*a*) Paragraphs 17, 18, 32, 37, 38 and 39, Sub-section A, apply.

(*b*) S.A.S. explosives should preferably be stowed on deck, in a deep tank or No. 1 lower hold, but any other below deck stowage may be used if more convenient. It may be necessary to restrict deck stowage during a period of emergency. A shelter deck space may only be used for the stowage of S.A.S. explosives if the explosives and any dangerous goods are separated by an efficient fire-stop.

(*c*) Magazines are not required for stowage in a deep tank or lower hold, but a 'tween deck space stowage will require a special magazine as in paragraphs 32 to 38, Sub-section D, unless the consignment occupies the greater portion of the 'tween deck, whilst for small quantities not exceeding 35 tons, containers constructed as in paragraphs 39 to 50, Sub-section D, will be used. Alternative arrangements to those set out in paragraphs 32 to 50, Sub-section D, may be adopted if approved by the Ministry of Transport and Civil Aviation.

(*d*) No other explosives are to be stowed in the same compartment as S.A.S. explosives.

(*e*) S A S explosives of Group 12 must not be stowed in the same compartment as those in Group 13 except that containers with S A S explosives of Group 12 may be in the same 'tween deck space as containers with S.A.S. explosives of Group 13, provided that each Group is at opposite ends of the space S A S explosives of Group 11 may be stowed with S.A.S explosives of Group 12.

(*f*) Insulated spaces with steel decks may be used for the stowage of S A S. explosives in Groups 11 and 12 and for shell and loose bombs in Group 13

(*g*) If S.A.S explosives of Group 13 containing chargings indicated by the letter " G " and a numeral are required to be shipped, prior reference must be made to the Ministry of Transport and Civil Aviation for the conditions of transport. In the case of Visiting Forces explosives of this group where this marking may not be used, reference will always be made to the Ministry of Transport and Civil Aviation

(*h*) Compartments in which Group 13 explosives are stowed must have all hatch covers, ventilators, pump suctions, scuppers, etc, effectively sealed off. Insulated spaces, together with their internal air ducts not necessary for cooling or ventilation, must also be sealed off

(*i*) Small quantities of less than 35 tons of S A.S explosives may be stowed in a suitable 'tween deck space between the ends of the hatches and the transverse bulkheads Suitable containers as described in paragraphs 39 to 50, Sub-section D, must be used, and they must be effectively sealed off from the compartment. Eight containers may be stowed in the same space.

(*j*) Deck stowage is preferable for S.A S explosives belonging to Groups 11, 12 and 13 under normal conditions. During an emergency it may be necessary to avoid this form of stowage where possible. The explosives must be conveyed in steel portable containers of Types A or B except in the case of lachrymatory stores which, as an alternative, may be conveyed in properly sheeted portable wooden magazines. The container or magazines will be spaced and arranged on deck so that each is readily accessible in case of an emergency They must not be stowed more than one tier high and must not be overstowed.

(*k*) S.A S explosives, other than Artillery Shell, Q F and Mortar Ammunition, may not be overstowed

Notes—1 The method of marking packages containing S.A S explosives in Groups 11, 12 and 13 is given in Sub-section F

2. Chemical Defence Preparations should be stowed in a similar manner to Group 13 explosives

26. Optional Deck Stowage. (D)

For the purposes of these Rules, " Optional Deck Stowage " means stowage on the uppermost deck in a suitable position away from steam pipes, the explosives being protected from weather and spray by tarpaulin covers and from the sun by an awning.

Explosives for which this stowage is suitable are indicated by the letter (D) after the normal stowage code letters in Sub-sections B and C.

27. Deck Stowage Only. D.S.O.

Explosives requiring this type of stowage must be placed on deck in steel containers.

28. Petrol Stowage Special. P.X.S.

Explosives requiring this type of stowage are in Group 15 and need the stowage conditions applicable to petrol in drums.

29. Unclassified Stowage. U.C.S.

Explosives requiring this type of stowage will be dealt with in accordance with Special Instructions issued by Headquarters of the Ministry of Transport and Civil Aviation.

30. Explosives and Coal

Explosives must not be carried in a compartment containing coal, nor in a compartment directly beneath one containing coal whether there is an intervening compartment free of coal or not

Explosives other than those marked " (C) " in column 3 of Sub-section B and column 4 of Sub-section C must not be carried in a 'tween deck compartment directly over a compartment containing coal whether there is an intervening compartment free from coal or not. In special circumstances, however, upon the authority of the Ministry of Transport and Civil Aviation Headquarters, to whom each case must be submitted, certain additional explosives may be stowed in 'tween deck compartments directly over compartments containing coal

When such compartments are used for the carriage of explosives, the explosives must be raised off the decks of the compartments by the use of battens to facilitate fire-fighting operations

The above restrictions do not apply to coke

31. Slinging Rules for Government Explosives

(*a*) Explosives packed in boxes, except in the special instances mentioned in (*d*), (*f*), (*g*) and (*h*) should be slung in ammunition trays of approved design (e g see Plate III) or on scale boards fitted with efficient anti-spilling devices

(*b*) Loose shell, up to and including 7 2 inch calibre, are to be slung in ammunition trays of approved design only

Loose shell, above 7 2 inch calibre, are to be slung in strop slings slightly nose heavy, care being taken with capped shell to see that the sling is clear of the cap and that the cap is not loosened

(*c*) Loose aircraft bombs, up to 1,000 lb inclusive, should be slung either with approved bomb slings (e g Plate IV) hooked into the lug on the *side* of the bomb, or alternatively, in ammunition trays of approved design or on scale boards fitted with efficient anti-spilling devices

Loose aircraft bombs, above 1,000 lb should be slung horizontally by two wire snotters in the form of a bridle.

(*d*) Clustered aircraft bombs, up to 1,000 lb, packed in steel cylinders, should be slung horizontally by means of —

(i) Approved bomb slings shackled to the holes in the joining flange of the cylinders or to the lifting rings provided on later types, or

(ii) By two wire snotters in the form of a bridle sling, the sharp edges of cylinder flanges being suitably packed with wood chafing pieces.

Clustered aircraft bombs above 1,000 lb, packed in steel cylinders, should be slung horizontally by two wire snotters of adequate S W.L in the form of a bridle sling, and sharp edges of cylinder flanges should be packed with wood chafing pieces.

Clustered aircraft bombs packed in wooden roller cases, should be slung horizontally by means of two snotters forming a bridle.

Clustered aircraft bombs packed in rectangular wooden cases, should be slung horizontally by rope sling (strops), the soundness of which must be verified regularly during the course of loading and discharging. Care must be taken to maintain uppermost that side of the package which is indicated as the top by appropriate markings.

Clustered aircraft bombs of the nose ejection type are to be slung in the manner described for loose aircraft bombs of the corresponding weight.

Note.—In all cases landing mats should be used when clustered aircraft bombs are being handled.

(*e*) Submarine mines except ground mines without crates, are to be slung by the lifting eyes provided. Ground mines without crates are to be slung by suitable strops. Special care must be taken to prevent damage to the casing.

(*f*) Mine charge cases and depth charges except Mark 11 (eleven) are to be, slung by their ringbolts, lifting lugs or lifting eyes of the crate holding them, as appropriate. Depth charges, Mark 11 (eleven), are to be slung on ammunition trays of approved pattern or scale-boards with an efficient anti-spilling device.

(*g*) Torpedo warheads should be slung by the special lifting lugs provided at the end of the package.

(*h*) Packages containing Naval B.L. cartridges are to be slung from their beckets using hook slings fitted with spring clips. Packages containing Naval Q.F. cartridges may also be slung from their beckets if this is more practicable than the use of ammunition trays, *vide* 31 (a). Care must be taken that all beckets are used, and that no one package takes the strain of another.

(*i*) The use of nets *alone* for slinging explosives is prohibited.

(*j*) Containers holding bulk explosive must not be rolled during the operations of loading or unloading.

32. Methods of Stowage

Explosives will be stowed in the following manner :—

(*a*) Loose shell and bombs :—

1. The bottom tier should rest on two broad runners, laid athwartships and sufficiently thick to keep the grummets or lugs clear of the deck. The runners should be at the points of greatest bearing, which, with shell, will be immediately in front of the driving band and at the shoulder.
2. The lower tier of shell should have the grummets hard against one another, the heads being spaced to keep the axes parallel and secured with chocks or dunnage sidepieces on each side. Aircraft bombs should be dealt with in a generally similar manner, care being taken to avoid damaging the lugs.
3. The chocks and dunnage pieces referred to in 2 can if necessary be dispensed with for the lower tiers of shell below 8 inch calibre, and also with shell of 8 inch calibre and above when there is only one tier and the shell in this tier are stowed alternately heads and tails with the grummets taking snugly against the shoulders of adjacent shell.
4. Riding tiers of shell should be reversed, care being taken that the grummets of the riding tier are taking snugly against the shoulders of the two lower shell. Aircraft bombs should be stowed similarly.
5. When shell of 7.2 inch calibre and above are stowed in more than one tier, two broad runners are to be placed below each tier at the points of greatest bearing on the tiers above and below, to ensure that the driving bands are not in contact with the shoulders of shell above or below them. In this arrangement each shell must be chocked off securely in a similar manner to those in the lower tier.
6. Wings should be secured by wedges thoroughly driven down.
7. Holding down boards are to be used for single or broken tiers and when shell are not overstowed.
8. Adjacent piles of shell or bombs should be stowed so that they are nose to nose and base to base.
9. The number of tiers, or height of stack, must not exceed the following :—

(i) Shell, all natures :—

	Tiers
12 inch and over ..	5
Below 12 inch to 7.2 inch	8
Below 7.2 inch to 5.5 inch	11
Below 5.5 inch	15

(ii) Aircraft bombs :—

Bombs, aircraft, A.P.	20 ft.
Bombs, aircraft, H.E., low charge	
Bombs, aircraft, H.E. medium charge not exceeding 1,000 lb	
Bombs, aircraft, H.E. medium charge exceeding 1,000 lb.	10 ft.
Bombs, smoke	
Bombs, T.1.	
Clusters, H.E.	
Clusters, incendiary	
Bombs, aircraft, H.E. high charge	3 tiers
Bombs, chemical	2 tiers

These limiting heights of stacking are based on the assumption that the stacks are positively secured by proper stowing. Bombs, aircraft, H.E., high charge must have wooden runners of at least 4 inches bearing face between tiers.

The following types of bombs will not be overstowed (i.e. have other cargo stowed on top) :—

Bombs, chemical
Bombs, smoke
Bombs, T.1.
Clusters, H.E.
Clusters, incendiary

When the other types of bombs are stacked to a height less than the maximum given above for the type, they may be overstowed provided that the overall weight on the lowest layer of bombs is not greater than that which would result from stacking the bombs to the given maximum height.

(*b*) Depth charges and mine charge cases are to be stowed fore and aft in athwartships tiers on their sides to a height not exceeding six tiers, having broad runners under the bottom tier, the pile to be blocked off similarly to shell.

(*c*) Submarine mines must not be stowed more than three tiers high.

(*d*) Barrels must invariably be stowed bilge free and be well chocked off.

(*e*) Packages containing explosives are to be stowed with their longest axis horizontal, unless otherwise specified.

(*f*) Boxed ammunition may normally be stacked to a height not exceeding 12 feet provided, in all cases, that a clear space of not less than 3 inches is left below the beams of the deck above

(*g*) Army pattern B L. cartridge cylinders, in skeleton cases, may be stacked horizontally to a height of 12 feet, but when skeleton cases are not fitted, the height of the stacks must not exceed 5 feet.

Naval pattern cartridge cylinders may be stacked horizontally up to 12 feet.

Army pattern cartridge cylinders may be stacked vertically to a height of 12 feet.

(*h*) Bulk explosives must be stowed so as to leave a clear space of at least 3 inches below the beams of the deck above.

33. Dangerous Goods

When dangerous goods or goods incompatible with explosives are loaded in a ship carrying explosives, these substances must be stowed in conformity with the instructions contained in Sub-section G of this Section and in the appropriate column of the Tables contained in the remaining Sections of these Rules.

34. Use of Hatchways

The square of the hatchways in the 'tween decks may be used if necessary for the stowage of explosives carried in portable magazines or any O.A.S. explosives The square of the hatchways should not normally be used for the stowage of explosives requiring magazine stowage unless the quantities are such as can be catered for by portable magazines. If no other stowage is available, and upon application to Ministry of Transport and Civil Aviation, authorisation may be given to build a magazine in this space. In such circumstances the hatchways on which the explosives are stowed must be made dust-proof to prevent any explosive leakage reaching the hold below.

35. Electrical Fittings

In any magazine for explosives requiring M S.A , M.S.B., M S D., or M S L stowage, electric cables or electrical apparatus should, if practicable, be excluded Where this is impracticable, electric cables may be allowed, provided they are enclosed in heavy gauge screwed steel conduit or protected by an electrically continuous metal sheathing and steel wire armouring or are of the mineral-insulated metal-sheathed type , and provided also that they are separated from the explosives by an approved non-combustible barrier secured to the deck above and consisting either of trunking, troughing or similar means arranged to enclose the cables, or of continuous sheeting extending over the upper surface of the explosives to the extremities of the magazine No junction boxes, switches, fuses, lamp fittings or other electrical appliances or cable joints shall be allowed within the magazine.

Before the stowage of explosives is commenced, tests of the insulation resistance of the cores and of the continuity of the metal sheathing and armouring of any cables traversing the magazine shall be made to ascertain the condition of the cables and the results of such tests certified by a competent person to the satisfaction of the Master of the ship

In any space containing a magazine or used for the stowage of explosives other than those enumerated in sub-paragraph 1, any cables and electrical equipment situated between the bulkheads forming the boundary of the space, shall be sited in relation to the cargo or protected, so as to ensure freedom from mechanical damage and risk of fire. All points to which portable apparatus could be connected must be effectively sealed to prevent their use.

36. Other Cargo

Cargo other than explosives, may, if of a kind not otherwise prohibited by these Rules, be placed in a magazine with explosives, provided that it is separated from them by a close lined partition.

37. Decontamination

When a vessel carrying "S.A.S" explosives reaches an overseas port the stowage space concerned will be inspected by a trained and equipped decontamination party, who will be responsible for supervising the removal of the explosives and for any decontamination action necessary. Special care is necessary in dealing with phosphorus leakage to ensure the *complete removal* of all loose phosphorus. When insulated spaces have been used for explosives charged G.1 or G 10, ventilation and lime washing of all *interior surfaces must be carried out immediately* the explosives are removed.

When S.A.S. explosives have been carried, the Master or Agent must arrange for a very careful examination of the stowage place to be carried out, after unloading, by a fully qualified person and, if necessary, to have all interior fittings and linings thoroughly decontaminated. In particular, such spaces must not be used for the stowage of food until they have been certified clear of contamination and suitable for such stowage by a fully qualified person.

At home ports, these duties will be carried out under the supervision of the Dock or Harbour Authorities who must be notified, in good time, by the Owners or Agents, of the expected date of arrival of the vessel. The Owner or Agent will, however, be responsible that spaces required for the stowage of food have been effectively decontaminated.

38. Respirators

When explosives indicated by the letter (R) in Sub-section B are carried each member of the crew must be provided with a service pattern respirator for use on the voyage, except that when such explosives are limited to lachrymatory stores, composition (Type E) P.N. or chemical ampoules, stores charged with F M. or C.S A M , six respirators only need be provided Respirators will be supplied by the War Department or by Service Authorities of Visiting Forces.

39. Conducting Parties.

Explosives in Group 13 (other than shell, mortar ammunition, steel " Bottles, Chemical " packed in activated charcoal in steel boxes secured by soldered steel wire and lachrymatory stores) must be accompanied throughout the voyage by a conducting party provided and equipped under arrangements made by the Service or Supply Department concerned. The strength of the party, and the protective and decontamination equipment to be supplied will be decided by the Service Department concerned.

40. Entry into Docks and Harbours

Government explosives bearing a mass explosion risk are designated as Shipping Category C and those bearing a mass fire risk or a limited explosion risk are designated as Shipping Category B The quantities permissible in any one ship in a dock or habour is defined in the " Conveyance in Harbours of Government Explosives and Explosives of Visiting Forces Regulations, 1956 ". Government explosives in Group 6 classified as Safety Ammunition will not be subject to any quantity restriction.

CLASSIFIED LIST OF GOVERNMENT AND VISITING FORCES EXPLOSIVES

The first list in this Sub-section gives the classifications of Government explosives (Navy, Army, Air Force and Ministry of Supply) and visiting forces explosives excepting those of the visiting forces of the United States of America The second list gives the classifications of the United States visiting forces explosives which are based on the shipment names marked on the explosives or their packages in compliance with the U.S. Interstate Commerce Commission Regulations The lists specify the U.K. Government explosives Group number, the Shipping Category and the Stowage Conditions appropriate to each Description of explosive. Additional requirements for certain explosives are given in notes at the end of each list. The following information is given in amplification of the details in the lists :—

Explosives Group Classification

The characteristics of the Goverment Explosives Groups, indicated against each explosive in the list by the numeral 1 to 15 in column 2, are as follows :—

Group 1

Explosives bearing a fire and explosion risk and relatively sensitive to spark or friction the explosives being in bulk or contained in paper or fabric wrapping (i.e. other than those contained in a sealed metal component) and not containing a means of ignition.

Group 2

Explosives liable to decomposition, bearing an explosion risk , not containing their own means of ignition.

Group 3

Explosives liable to decomposition, bearing a fire risk, not containing their own means of ignition.

Group 4

Stable explosives, bearing a fire or explosion risk ; not containing their own means of ignition.

Group 5

Unboxed shell or bombs filled H E., gunpowder or star composition, plugged or fuzed.

Group 6

Boxed ammunition, containing high explosives, gunpowder and propellants only, with or without their own means of ignition.

Group 7

High capacity ammunition, filled high explosive, plugged, with or without components in their packages.

Group 7A

High capacity ammunition, filled high explosive, containing its own means of ignition.

Group 8

Mortar, grenades and rocket ammunition (filled H.E. or gunpowder) and H E charges, with or without propellants and components in their packages.

Group 9

Pyrotechnics.

Group 10

Detonators and initiatory compositions.

Group 11

Incendiary and smoke ammunition, not containing phosphides, white phosphorus, inflammable liquids or gel , with or without components in their packages

Group 12

Ammunition containing phosphide or white phosphorus, with or without components in their packages.

Group 13

Chemical ammunition, with or without components in their packages.

Group 14

This is a special Group, applicable only to stowage in H.M. ships.

Group 15

Incendiary ammunition containing inflammable liquids or gel, but **not** containing phosphides or white phosphorus, with or without components in their packages.

Stowage Conditions

The Stowage Conditions in cargo ships for each explosive are denoted by the code letters in column 4 of the list. See paragraphs 21 to 29, Sub-section A.

Shipping Categories

The Shipping Category for each explosive other than for those in the Safety Class is denoted in column 3 of the list by the letters B or C. The characteristics of Shipping Categories B and C explosives are as follows :—

Shipping Category B

Those explosives which have a fire or minor explosion risk but not the risk of mass explosion. This category also includes weapons having a toxic risk.

Shipping Category C

Those explosives which have a mass explosion risk.

CLASSIFIED LIST OF GOVERNMENT AND VISITING FORCES EXPLOSIVES

(See separate list for U.S Visiting Forces Explosives, page 21)

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Adapters, booster	6	C	O.A.S.	
Adapters, exploder	6	C	O.A.S	
Adapters, "K"	6	B	O A.S	
Amatex	4	C	M S B	
Amatol	4	C	M.S.B.	
Ammonal	4	C	M.S.B.	
Ammonium picrate	4	C	M S.L.	
Ampoules, chemical	13	B	S A.S.(D)(R)	See Notes 11 and 12
Ballistite	1	C	M.S.A.	
Ballistite in metallic containers	2	C	M S B.	See Note 9
Bangalore torpedoes	8	C	O.A S.	
Baratol	4	C	M S B	
Battle noises	4	C	M.S B	
Blasting explosives	2	C	M S B.	
Bombs, A.R.P.	9	B	A.S P.	See Note 5
Bombs, aircraft, A.P.	5	C	O.A.S.	
Bombs, aircraft, H.E. (High Charge)	7	C	O.A.S.	
Bombs, aircraft, H.E. (Low charge) (boxed)	6	C	O.A.S.	
Bombs, aircraft, H.E. (Low charge) (loose)	5	C	O.A.S	
Bombs, aircraft, H.E. (Medium charge)	5	C	O.A.S.	
Bombs, chemical	13	B	S.A S (R)	See Notes 11 and 12
Bombs, demolition	8	C	O.A.S.	
Bombs, incendiary	11	B	O.A S (D)	
Bombs, incendiary, liquid	15	B	P X.S.	
Bombs, incendiary, W.P.	12	B	S.A.S (D)(R)	See Note 8
Bombs, practice, flash	9	B	A.S.P.	See Note 5
Bombs, smoke	11	B	O A S (D)	See Note 7
Bombs, T.I.	9	B	A.S.P.	See Note 5
Bottles, chemical	13	B	S.A.S.(R)	See Notes 11 and 12
Boxes, junction	6	B	O.A.S.	
Bursters, bomb	6	B	O.A.S.	
Bursters, gunpowder	1	C	O A.S	
Bursters, H E.	1	C	M S A.	
Bursters, limpet	8	C	O.A.S.	
Bursters, mine	6	B	O A S.	
Candles, rocket, flare	9	B	A S.P.	See Note 5
Candles, smoke	11	B	O.A.S.(D)	
*Caps, percussion	6	—	O.A.S (C)	Safety Class
Capsules, delay	6	B	O.A S.	
*Cartridges, aiming rifle	6	—	O.A S (C)	Safety Class
**Cartridges, B L.	3	B	M S B	
**Cartridges, B L , with tubes	6	B	O.A.S	
*Cartridges, bolt	6	—	O.A S (C)	Safety Class
*Cartridges, cable cutting	6	—	O A.S (C)	Safety Class
Cartridges, ejection	6	B	O A.S.	
Cartridges, electric, (H C.)	6	B	O.A.S.	
Cartridges, electric, (L C)	6	B	O.A.S.	
Cartridges, engine starter	6	B	O A.S.	
Cartridges, flash	9	B	A.S P.	See Note 5
Cartridges, illuminating	9	B	A S.P.	See Note 5
Cartridges, impulse, torpedo, cordite	6	B	O.A.S.	
Cartridges, impulse, torpedo, gunpowder	6	C	O A.S	
*Cartridges, link	6	—	O.A.S (C)	Safety Class
Cartridges, lowering undercarriage	6	B	O.A.S.	
Cartridges, M L., depth charge thrower	6	B	O A S	
*Cartridges, M L., mortar	6	—	O.A.S.(C)	Safety Class
Cartridges, M L., mortar, augmenting	1	C	M S.A.	
Cartridges, M.L., mortar, augmenting in metallic containers	2	C	M S.B.	See Note 9
Cartridges, percussion, (H C)	6	B	O A.S.	
Cartridges, percussion, (L.C)	6	B	O.A.S	
*Cartridges, pistol	6	—	O A S.(C)	Safety Class
*Cartridges, punch	6	—	O.A S (C)	Safety Class
Cartridges, Q.F , H.E.	6	B	O.A.S	
Cartridges, Q F., H.E., high charge	6	C	O.A.S.	
Cartridges, Q.F , practice	6	B	O.A.S.	
Cartridges, Q F , radar echo	6	B	O.A.S.	
Cartridges, Q.F , separate	6	B	O.A.S.	
Cartridges, Q F , separate, gunpowder	6	B	O A.S.	

* See Note 3
** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Cartridges, Q.F., shot	6	B	O.A S	
Cartridges, Q.F., shrapnel	6	B	O.A S	
Cartridges, Q.F., smoke	11	B	O.A.S (D)	
Cartridges, Q.F., smoke, F.M. or C.S.A.M	11	B	S.A.S.(D)(R)	See Note 6
Cartridges, Q.F., smoke, W.P	12	B	S.A.S (D)(R)	See Note 8
Cartridges, Q.F., star	6	B	O.A S	
*Cartridges, radar echo	6	—	O.A S (C)	Safety Class
*Cartridges, rim fire	6	—	O.A S (C)	Safety Class
*Cartridges, rocket	6	—	O.A S (C)	Safety Class
*Cartridges, S.A., ball	6	—	O.A S (C)	Safety Class
Cartridges, S.A., H E	6	C	U C.S.	
Cartridges, S.A., H E./I.	6	C	U C S.	
Cartridges, S.A., incendiary	6	B	O.A S.	
Cartridges, S.A., observing	12	B	O.A S (D)	
*Cartridges, S.A , piercing	6	—	O.A.S (C)	Safety Class
*Cartridges, S.A , separate	6	—	O.A S (C)	Safety Class
*Cartridges, S.A , tracer	6	—	O.A S (C)	Safety Class
*Cartridges, shot gun	6	—	O.A.S (C)	Safety Class
Cartridges, signal	9	B	A S.P	See Note 5
*Cases, cartridge, capped	6	—	O A.S (C)	Safety Class
Charges, cased	6	C	O.A S	
Charges, demolition	7	C	O.A.S	
Charges, gunpowder	1	C	M S.A.	
Charges, line	7	C	O.A S	
**Charges, propellant, incremental	3	B	M S.B	
Charges, propelling	1	C	M S.A.	
Clusters, flare	9	B	A S P	See Note 5
Clusters, incendiary	11	B	O.A S (D)	See Note 7
Clusters, incendiary, W.P,	12	B	S A.S (D)(R)	See Note 8
Compositions, (Type A), P.N	1	C	M S.A	
Compositions, (Type A), S R.	1	C	M S.A	
Compositions, (Type B), P.N	1	C	M S.A.	
Compositions, (Type B), S.R.	1	C	M S.A.	
Compositions, (Type C), P N	11	C	U C.S.	
Compositions, (Type C), S R	11	B	U.C.S.	

* See Note 3
** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Compositions, (Type D), P N	11	B	O.A.S.(D)	
Compositions, (Type D), S.R.	11	B	O.A.S.(D)	
Compositions, (Type E), P.N.	13	B	S.A.S.(D)(R)	See Notes 11 and 12
Composition, exploding	1	C	M S A.	
Composition, illuminating	1	C	M S A.	
Composition, initiating, R.D , dry, 1 oz. sample	10	B	M.S D.	
Composition, initiating, R D., wet	10	C	M.S D.	
Composition, match	1	C	M.S.A.	
Composition, priming	1	C	M S.A.	
Composition, rocket	1	C	M.S.A.	
Composition, rocket, life-saving	1	C	M S.A.	
Containers, chemical	13	B	S.A S.(R)	See Notes 11 and 12
**Cordite	3	B	M S B.	
Cordite, small arms, granular	1	C	M.S.A	
Cordite, small arms, granular in metallic containers	2	C	M.S.B.	See Note 9
Cordtex	1	C	O.A.S	See Note 13
Crackers, blank	9	B	A.S.P	See Note 5
Demolition explosives	4	C	M.S.B.	
Depth charges	7	C	O A S	
Destructors, contact	8	C	O.A.S.	
Destructors, H E.	8	C	O.A S.	
Destructors, incendiary	11	B	O A S (D)	
Detonator bursters	10	C	M S D	
Detonators	10	C	M S D.	
Di-nitro-phenol	4	C	M S.L.	See Note 1
Di-nitro-resorcinol	4	C	M S.L.	See Note 1
Ejectors, contents	6	B	O.A.S.	
Ejectors, electric	6	B	O.A.S.	
Ejectors, flare	6	B	O.A.S.	
Exploders, C.E.	1	C	M S A.	
Exploders, picric	4	C	M S L	
Exploders, picric powder	1	C	M S L.	
Exploders, RDX/Wax	4	C	M S B	
Exploders, T.N.T.	4	C	M S B	

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Explosive sweeps	8	C	O.A S	
Flares, ground	9	B	A.S P	See Note 5
Flares, identification	9	B	A.S.P	See Note 5
Flares, illuminator	9	B	A S P	See Note 5
Flares, incendiary	11	B	O.A.S (D)	
Flares, reconnaissance	9	B	A.S P	See Note 5
Flares, signal	9	B	A.S P	See Note 5
Flashes, photographic (large)	5		O.A S	
Flashes, photographic (medium)	6	C	O.A S.	
Floats, flare	9	C	A S P	See Note 5
Floats, lachrymatory	13	B	S.A.S (D)(R)	See Notes 11 and 12
Floats, signal	6	B	O.A.S	
Floats, smoke	11	B	O.A.S (D)	
Floats, smoke and flame	9	B	A.S.P.	See Note 5
Fulminate of mercury, dry, 1 oz. sample	10	B	M S O.	
Fulminate of mercury, wet	10	B	M S O.	
Fuse, detonating	4	C	O.A.S.	
Fuse, instantaneous	6	C	O A S.	
*Fuse, safety	6	B	O.A S (C)	Safety Class
Fuze powders	1	—	M.S A.	
Fuzes	6	C	O.A S	
Fuzes, mine, A.Tk. No. 3	10	B	U.C S.	
Fuzes, with exploders	6	C	O.A S.	
		C		
Gaines	6		O.A.S.	
Generators, chemical	13	B	S.A S (R)	See Notes 11 and 12
Generators, lachrymatory	13	B	S A S (D)(R)	See Notes 11 and 12
Generators, smoke	11	B	O.A S (D)	
Grenades, H.E	8	B	O A S	
Grenades, H.E /H C.	8	B	O A S	
Grenades, incendiary	11	C	O.A S (D)	
Grenades, lachrymatory	13	B	S A S (D)(R)	See Notes 11 and 12
Grenades, signal	9	B	A.S.P.	See Note 5
Grenades, smoke	11	B	O.A.S (D)	
Grenades, smoke, W.P.	12	B	S.A S (D)(R)	See Notes 8 and 10
Guncotton, dry	1	B	M.S.A.	
Guncotton, sets, demolition	4	C	M S.B.	
Guncotton, wet	4	C	O A.S	
Guncotton, wet, loose	4	C	M S B.	
Gunpowder	1	C	M S A.	
		C		

* See Note 3

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Heads, rocket, flare	9	B	A.S.P.	See Note 5
Heads, rocket, radar echo	6	B	O A.S	
Heads, rocket, target	9	B	A S.P	See Note 5
Heads, T-cutters	6	B	O.A.S	
Igniters, electric	6	B	O A S.	
Igniters, flame thrower	9	B	A.S.P	See Note 5
Igniters, fuse	6	B	O.A.S.	
Igniters, gunpowder	1	C	M S.A.	
Igniters, rocket	9	B	A.S P.	See Note 5
*Igniters, safety	6	—	O.A S (C)	Safety Class
Igniters, shell	6	B	O.A.S	
Igniters, smoke	9	B	A.S P.	See Note 5
Igniters, torpedo	11	B	O A.S (D)	
Indicators, A/S, training	9	B	A.S.P	See Note 5
Indicators, mine, firing	9	B	A.S.P	See Note 5
Initiators, thermal	6	B	O.A S.	
Kits, waterproofing	8	C	O.A.S.	
Lead azide, wet or dry, 1 oz sample	10	B	M S.D.	
Lights, service	9	B	A.S.P.	See Note 5
Markers, smoke	11	B	O.A S (D)	
Mines, alarm	9	B	A.S.P	See Note 5
Mines, anti-personnel	8	C	O.A.S	
Mines, cases, charge	7	C	O.A.S	
Mines, chemical	13	B	S.A S (R)	See Notes 11 and 12
Mines, contact	7	C	O.A S	
Mines, land	8	B	O.A.S.	
Mines, underwater	7	C	O.A.S.	
Minol	4	C	M S.B	
Mortar ammunition, chemical	13	B	S.A S (R)	See Notes 11 and 12
Mortar ammunition, H.E (light)	8	B	O.A.S.	
Mortar ammunition, H.E. (medium)	8	C	O.A.S.	
Mortar ammunition, practice	8	B	O.A.S.	
Mortar ammunition, radar echo	8	B	O.A.S.	
Mortar ammunition, signal	9	B	A S.P.	See Note 5.
Mortar ammunition, smoke	11	B	O.A S.(D)	

* See Note 3

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Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Mortar ammunition, smoke, F.M or C.S.A.M.	11	B	S.A.S.(D)(R)	See Note 6
Mortar ammunition, smoke, W P ..	12	B	S.A S (D)(R)	See Note 8
Motors, rocket, (boxed)	6	B	O.A.S.	
**Motors, rocket, H.C., (boxed)	6	B	O.A.S.	
**Motors, rocket, H.C., (loose)	8	B	O.A.S.	
**Nitrated paper	3	B	M.S B.	
**Nitro-cellulose cannon powder	3	B	M.S.B.	
Nitro-cellulose small arms granular powder .	1	C	M.S.A.	
Nitro-cellulose small arms granular powder in metallic containers .	2	C	M S B.	See Note 9
Nobel's 808 ..	2	C	M S.B	
Nobel's 809 .. .	2	C	M S.B	
Nobel's 896 ..	4	C	M.S B.	
Pentolite	4	C	M S B	
Petards	8	C	O.A.S.	
P.E T N , dry, 1 oz. sample	10	B	M.S D.	
P.E T N , wet .. .	4	C	M S B.	See Note 2
P.E T N /Wax	4	C	M S B.	
Picric acid	4	C	M S L.	See Note 1
Picric powder ..	1	C	M S L.	
Picrite .	4	C	M S B.	
Plastic explosive	4	C	M S B.	
**Plastic propellant, type 1	3	B	M S.L.	
Plastic propellant, type 2	2	C	M S.L.	
Portfires . .	9	B	A S.P.	See Note 5
Potassium di-nitro-phenate	4	C	M.S L.	See Note 1
Primers, C.E ..	1	C	M S.A.	
Primer detonators ..	6	B	O A S.	
Primers, electric ..	6	B	O A.S.	
Primers, electric & percussion	6	B	O.A S.	
Primers, metal, H.E. .	8	C	O A S.	
Primers, percussion ..	6	B	O.A S.	
Projector ammunition, H E.	8	C	O.A S.	
Projector ammunition, practice .	8	B	O.A S	

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Projectiles, A/S., fuzed .	7A	C	O.A.S.	
Projectiles, A/S., plugged	7	C	O.A.S.	
Projectiles, H.E., hedgehog	8	C	O A.S.	
Projectiles, H E , hedgerow	8	C	O.A.S.	
Projectiles, hedgehog, weighted . ..	6	B	O.A.S.	
Projectiles, practice, hedgerow ..	6	B	O A.S.	
Propellant compositions	2	C	M S B	
Puffs, cordite . .	1	C	M S.A.	
Puffs, cordite in metallic containers	2	C	M S.B.	See Note 9
Puffs, gunpowder .	1	C	M S A.	
Puffs, powder, with igniter	6	C	O.A.S	
Puffs, smoke . ..	11	B	O.A.S (D)	
Quickmatch ..	1	B	O.A.S.	
R.D X., dry 1 oz. sample	10	B	M S.D.	
R.D X., wet . ..	4	C	M S.B	See Note 2
R.D X./T N T. .	4	C	M S B	
R.D X./Wax . ..	4	C	M S B	
Relays, electric	6	B	O.A S.	
Rockets, H E. ..	8	C	O.A.S	See Note 4
Rockets, illuminating .	9	B	A.S.P.	See Note 5
Rockets, line	9	B	A.S P.	See Note 5
Rockets, practice ..	9	B	A.S P.	See Note 5
Rockets, signal ..	9	B	A S P.	See Note 5
Rockets, training .	8	B	O A.S	See Note 4
Sets, fuzing .	6	B	O A.S.	
Sets, initiating charges .	8	B	O.A S	
Shell, chemical ..	13	B	S.A S (R)	See Notes 11 and 12
Shell, flare (boxed) ..	6	B	O.A.S.	
Shell, flare (loose) ..	5	B	O.A S	
Shell, H E (boxed) ..	6	B	O A S.	
Shell, H.E (loose) .	5	C	O.A.S (D)	
Shell, H E., A/C, rocket	8	C	O.A S.	
Shell, H.E., armour piercing (loose) ..	5	B	O A.S (D)	
Shell, H E , high charge	6	C	O A S.	
Shell, H.E , piercing (loose)	5	C	O.A S (D)	
Shell, H E., rocket	8	C	O A.S	
Shell, H.E., S.A.P. (loose)	5	C	O.A S (D)	
Shell, incendiary ..	11	B	O.A.S (D)	

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Shell, practice (loose) ..	5	B	O.A.S (D)	
Shell, practice (boxed) ..	6	B	O.A.S	
Shell, radar echo (loose)	5	B	O.A.S.(D)	
Shell, radar echo (boxed)	6	B	O.A.S.	
Shell, shrapnel (loose) ..	5	B	O.A.S (D)	
Shell, shrapnel (boxed) ..	6	B	O.A.S.	
Shell, smoke .	11	B	O.A.S (D)	
Shell, smoke, F.M or C.S.A.M . ..	11	B	S.A.S (D)(R)	See Note 6
Shell, smoke, W.P. ..	12	B	S.A.S (D)(R)	See Note 8
Shell, star (loose) ..	5	B	O.A.S (D)	
Shell, star (boxed) ..	6	B	O.A.S.	
Shot, tracer	5	B	O.A.S (D)	
Shot, with tracer (boxed)	6	B	O.A.S.	
Signals	9	B	A.S.P	See Note 5
Signals, drift, night ..	11	B	O.A.S (D)	
*Signals, fog . ..	6	—	O.A.S (C)	Safety Class
Simulators, gunflash .	9	B	A.S.P.	See Note 5
Simulators, R.F. or M.O.	10	C	M.S.D	
Sleeves, fuze	10	C	M.S.D.	
Styphnic acid, dry, 1 oz. sample . . .	10	B	M.S.D.	
Styphnic acid, wet ..	4	C	M.S.L	See Note 2
Switches . . .	6	B	O.A.S.	
Switches, H.E.	8	C	O.A.S	
Thunderflashes . .	9	B	A.S.P	See Note 5
T.N.T	4	C	M.S.B	
Torpex	4	C	M.S.B	
Tracers	9	B	A.S.P.	See Note 5
Tritonal	4	C	M.S.B	
Tubes, electric	6	B	O.A.S	
Tubes, friction	6	B	O.A.S.	
Tubes, percussion ..	6	B	O.A.S.	
Warheads	7	C	O.A.S	

* See Note 3

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NOTES RELATING TO THE LIST OF GOVERNMENT EXPLOSIVES COMPRISING SUB-SECTION B

Note 1

Picric acid, potassium di-nitro-phenate and di-nitro-resorcinol containing 33⅓ per cent of water, calculated on the wet material, are non-explosive.

Di-nitro-phenol containing 15 per cent. of water calculated on the wet material is non-explosive.

Di-nitro-resorcinol, di-nitro-phenol, picric acid and potassium di-nitro-phenate may only be consigned as non-explosive when wetted as indicated and provided the di-nitro-resorcinol, di-nitro-phenol or potassium di-nitro-phenate is packed in a watertight package.

Note 2

P.E.T.N. or R.D.X. must be wetted with 25 per cent. of water and styphnic acid with 20 per cent. of water, calculated on the wet material, for carriage by sea. This is a safety precaution only, and does not render the material non-explosive. Watertight packages must be used.

Note 3

Explosives included in the Safety Class bear the Group 6 Government Explosives Label including the words " Safety Class " (older labels may include the words " Safety Cartridges " instead). They may be conveyed by passenger ship in any reasonable quantity either in peace or war, in their normal service packages.

Note 4

Fully assembled rockets H.E., or rockets, training, must be stowed with the head towards a bulkhead. Packages are marked to indicate the head.

Note 5

Group 9 explosives must not be overstowed.

Note 6

Packages containing ammunition charged with F.M. or C.S.A.M. must bear the label or stencil, " S.A.S " when forwarded for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 7

Bombs, smoke, and clusters, incendiary, in Group 11 must not be overstowed.

Note 8

Packages containing explosives belonging to Group 12 requiring S.A.S. stowage must be labelled or stencilled " S.A.S " for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 9

The metallic containers must be airtight, a luting seal is not sufficient.

Note 10

Grenades, smoke, W.P., must be certified as having been 100 per cent. examined within one month before shipping. When certified to be packed in scored tinplate cylinders and to have been produced within one year of the date of shipment, the 100 per cent. examination of these grenades will not be required. If the period which has elapsed since production is more than one year but does not exceed two years it should be certified that the scored cylinders have been subjected to 100 per cent. external examination and the grenades to a 2 per cent. examination.

Note 11

All types of chemical ammunition (other than shell, mortar ammunition, steel chemical bottles—when packed in activated charcoal—and lachrymatory stores) must have a conducting party.

Note 12

Packages containing explosives belonging to Group 13 must be labelled or stencilled "S.A.S." for shipment and, except in the case of artillery shell, Q F. cartridges and mortar ammunition, must not be overstowed.

Note 13

O A S conditions for cordtex are conditional upon the exposed ends of the explosive being effectively sealed and the use of a stout wooden package for the explosive. If these conditions are not fulfilled the stowage conditions will be M.S.A. Cordtex must not be overstowed.

Note 14

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours.

AMMUNITION OF THE NON-EXPLOSIVE CATEGORIES OF DANGEROUS GOODS

There are some types of ammunition used in the Services which are categorised in the non-explosive categories of "Dangerous Goods" as given in Statutory Instrument No 1977/1952 under the title "The Merchant Shipping (Dangerous Goods) Rules, 1952". The designations of these types together with the nature of the danger to which they give rise, as indicated by the categories to which they belong, are given in the following table.

Designation of Ammunition (1)	Dangerous Substance (2)	Category in accordance with S.I No 1977 of 1952 (3)	Section of Report applicable (4)
Ampoules, acetone ..	Acetone ..	(v)	5
Ampoules for mine, practice, contact, A.Tk.	Chlorsulphonic acid mixture	(iii)	3
Bomb, aircraft, practice, flame, break-up 8½ lb.	Phosphide ..	(vi)	6
Bomb, aircraft, practice, smoke, break-up 8½ lb	Titanium tetrachloride	(iii)	3
Bomb, aircraft, practice, smoke, filled F.M. or C S.A.M.	Titanium tetrachloride or chlorsulphonic acid mixture	(iii)	3
Bomb, incendiary, AN-M, .. lb., filled T P.1. (See Group 15 for these bombs fitted with exploders)	Petrol	(v)	5
Candles, smoke, white ..	Phosphide .. .	(vi)	6
Container, smoke	Titanium tetrachloride	(iii)	3
Destructor, incendiary No. 2 (See Group 11 for other numbers)	Petrol	(v)	5
Drums, F.M . . .	Titanium tetrachloride	(iii)	3
Flame floats, aircraft, navigation	Phosphide	(vi)	6
Installation, S C., type G, . lb., filled F M	Titanium tetrachloride .. .	(iii)	3
Light, indicating lifebuoy ..	Phosphide	(vi)	6
Light, indicating torpedo ..	Phosphide	(vi)	6
Marker, marine, aircraft ..	Phosphide	(vi)	6
Marker, sea, aluminium .	Aluminium powder	(vi)	6
Matches, flamer . ..	Match composition	(x)	7b
Matches, fuzee, safety	Match composition	(x)	7b
Matches, waterproof safety .	Match composition	(x)	7b
Mine charge cases, filled sodium phosphide . .	Phosphide .. .	(vi)	6
Slow match	Potassium nitrate ..	(x)	7a
Submarine bubble decoy ..	Magnesium and iron powder	(vi)	6

These types of ammunition must not be labelled or marked to suggest they contain explosives and must not be consigned for transport as explosives. The package (or weapon, if loose) must be stencilled or labelled to indicate the designation of the ammunition, the substance contained which brings it under the "Dangerous Goods" Rules and the nature of the risk corresponding to its category as given in the Rules, e.g. Installation, S.C., Type G, 250 lb — Titanium Tetrachloride — Corrosive. In the case of ammunition belonging to Category (v) it is also necessary to add stencilling or a label bearing the words "Highly Inflammable — Flash Point Below 73°" or "Inflammable — Flash Point 73°–150°", as applicable The stowage of these types of ammunition in relation to explosives will be governed by the conditions laid down for the dangerous substance which they contain.

UNITED KINGDOM CLASSIFIED LIST OF UNITED STATES VISITING FORCES EXPLOSIVES

Description (I.C.C. Shipping Name)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
Ammunition for cannon with empty projectiles	6	B	O.A.S.	
Ammunition for cannon with explosive projectiles	6	C	O.A.S.	
Ammunition for cannon with explosive projectiles (high charge)	6	C	O.A.S.	
Ammunition for cannon with gas projectiles	13	B	S.A.S.(R)	See Notes 1 and 2
Ammunition for cannon with illuminating projectiles	6	B	O.A.S.	
Ammunition for cannon with incendiary projectiles	11	B	O.A.S.(D)	
Ammunition for cannon with incendiary projectiles (W.P.)	12	B	S.A.S.(D)(R)	
Ammunition for cannon with inert loaded projectiles	6	B	O.A.S.	
Ammunition for cannon with smoke projectiles	11	B	O.A.S (D)	See Note 10
Ammunition for cannon with smoke projectiles (W.P.)	12	B	S.A.S.(D)(R)	See Note 3
Ammunition for cannon with solid projectiles	6	B	O.A.S.	
**Ammunition for cannon without projectiles	6	B	O.A.S.	See Note 4
Ammunition for small arms with explosive bullets	6	C	O.A.S.	
Ammunition for small arms with explosive projectiles	6	C	O.A.S.	
Black powder	1	C	M.S.A.	
Blasting caps, 1,000 or less	10	C	M.S.D.	
Blasting caps, more than 1,000	10	C	M.S.D.	
Blasting caps with safety fuse, 1,000 or less	10	C	M.S.D.	
Boosters (explosive)	6	B	O.A.S.	
Combination fuzes	6	B	O.A.S (C)	
Combination primers	6	B	O.A.S.	
Cordeau detonant fuse	1	C	O.A.S.	See Note 5
Delay electric igniters	6	B	O.A.S.	
Detonating fuzes	6	B	O.A.S.(C)	
Electric blasting caps, 1,000 or less	10	C	M.S.O.	
Electric blasting caps, more than 1,000	10	C	M.S.D.	
Electric squibs	6	B	O.A.S.	
Explosive bombs	7	C	O.A.S.	
Explosive bombs (fuzed)	7A	C	O.A.S.	
Explosive bombs (smaller charges) (boxed)	6	C	O.A.S.	
Explosive bombs (smaller charges) (unboxed)	5	C	O.A.S.	
Explosive bombs (black powder)	7	C	O.A.S.	
Explosive bombs (black powder) (fuzed)	7A	C	O.A.S.	
Explosive bombs (gas)	13	B	S.A.S (R)	See Notes 1 and 2
Explosive bombs (incendiary)	11	B	O.A.S (D)	
Explosive bombs (incendiary), (IM, PT or NP)	15	B	P.X.S	
Explosive bombs (incendiary, W.P.)	12	B	S.A.S (D)(R)	See Note 3
Explosive bombs (smoke)	11	B	O.A.S.(D)	See Note 10
Explosive bombs (smoke, W.P.)	12	B	S.A.S.(D)(R)	See Note 3
Explosive cable cutters	6	B	O.A.S.	
Explosive mines	7	C	O.A.S	
Explosive projectiles	5	C	O.A.S (D)	
*Explosive rivets	6	—	O.A.S (C)	Safety Class
Explosive torpedoes	7	C	O.A.S.	
Fireworks, common	9	B	A.S.P.	See Note 6
Fireworks, special	9	B	A.S.P.	See Note 6
Fuse igniters	6	B	O.A.S	
Fuse lighters	6	B	O.A.S.	
Gas projectiles	13	B	S.A.S.(R)	See Notes 1 and 2
Hand grenades	8	B	O.A.S	
High explosives	7	C	O.A.S.	
Illuminating projectiles	6	B	O.A.S.	

** See Note 4

* See Note 9.

Description (I.C.C. Shipping Name)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
Instantaneous fuse ..	6	B	O.A.S.	
Jet thrust Units, Class A	6	B	O.A.S.	
Jet thrust Units, Class B	6	B	O.A.S.	
Low explosives .. .	9	B	A.S.P.	See Note 6
*Percussion caps ..	6	—	O.A.S.(C)	Safety Class
Percussion fuzes ..	6	B	O.A.S	
Percussion primers ..	6	B	O.A.S	
Primers for cannon ..	6	B	O.A.S	
*Primers for small arms ..	6	—	O.A.S (C)	Safety Class
Rifle grenades, (explosive)	8	B	O.A.S	
Rocket ammunition with empty projectiles ..	6	B	O.A.S	See Note 7
Rocket ammunition with explosive projectiles	8	C	O.A.S	See Note 7
Rocket ammunition with gas projectiles	13	B	S.A.S (R)	See Notes 1, 2 and 7
Rocket ammunition with illuminating projectiles	6	B	O.A.S	See Note 7
Rocket ammunition with incendiary projectiles ..	11	B	O.A.S.(D)	See Note 7
Rocket ammunition with incendiary projectiles (W.P) .. .	12	B	S.A.S.(D)(R)	See Notes 3 and 7
Rocket ammunition with inert loaded projectiles	6	B	O.A.S.	See Note 7
Rocket ammunition with smoke projectiles .	11	B	O.A.S.(D)	See Notes 7 and 10
Rocket ammunition with smoke projectiles (W.P.)	12	B	S.A.S.(D)(R)	See Notes 3 and 7
Rocket ammunition with solid projectiles .	6	B	O.A.S	See Note 7
Rocket ammunition without projectiles .	6	B	O.A.S	
*Safety fuse .	6	—	O.A.S (C)	Safety Class
*Safety squibs .	6	—	O.A.S (C)	Safety Class
*Small arms ammunition	6	—	O.A.S (C)	Safety Class
**Smokeless powder for cannon	3	B	M.S.B.	See Note 4
Smokeless powder for small arms	1	C	M.S.A.	
Smokeless powder for small arms in metallic containers	2	C	M.S.B	See Note 8
Smoke projectiles .	11	B	O.A.S.(D)	See Note 10
Smoke projectiles (W.P.)	12	B	S.A.S.(D)(R)	See Note 3
Time fuzes	6	B	O.A.S.	
Tracer fuzes	6	B	O.A.S.(C)	
Tracers	9	B	A.S.P.	See Note 6

* See Note 9
** See Note 4

NOTES RELATING TO THE LIST OF UNITED STATES VISITING FORCES EXPLOSIVES INCLUDED IN SUB-SECTION B

Note 1

All types of gas ammunition (other than cannon projectiles, mortar ammunition and lachrymatory stores) must have a trained conducting party, provided with decontamination equipment for dealing with leakages.

Note 2

Packages containing explosives belonging to Group 13 must be labelled or stencilled " S.A.S " for sea transport and, except in the case of cannon projectiles, fixed or semi-fixed complete artillery rounds and mortar ammunition, must not be overstowed.

Note 3

Packages containing explosives belonging to Group 12 requiring S.A.S. stowage must be labelled or stencilled " S.A.S " for sea transport and, except in the case of cannon projectiles, fixed or semi-fixed complete artillery rounds and mortar ammunition, must not be overstowed.

Note 4

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours.

Note 5

O.A.S conditions for cordtex and primacord are conditional upon the exposed ends of the explosive being effectively sealed and the use of a stout wooden package for the explosive. If these conditions are not fulfilled the stowage conditions will be M.S.A. These explosives must not be overstowed.

Note 6

Group 9 explosives must not be overstowed.

Note 7

Fully assembled rockets with projectiles must be stowed with the head towards a bulkhead. Packages should be marked to indicate the head.

Note 8

The metallic containers must be airtight, the use of a sealing composition on the lid joint of a container is not sufficient.

Note 9

Packages containing explosives included in the Safety Class should be labelled or stencilled " Safety Class ". These explosives may be conveyed by passenger ship in any reasonable quantity either in peace or war in their normal service packages.

Note 10

The stowage conditions for ammunition loaded F.M or F.S is S.A.S (D)(R). Packages containing ammunition loaded F.M. or F.S must be labelled or stencilled " S.A.S " when forwarded for sea transport. Except in the case of cannon projectiles, fixed or semi-fixed complete artillery rounds and mortar ammunition, ammunition loaded F.M. or F.S must not be overstowed.

Note 11

Smoke bombs and incendiary clusters in Group 11 must not be overstowed.

SUB-SECTION C

AUTHORISED COMMERCIAL EXPLOSIVES

Notes.—1. For the purposes of the Explosives Act, 1875 (see Order in Council No. 1 of the said Act), Explosives are divided into seven Classes as follows :—

Class I	Gunpowder
Class II	Nitrate Mixture
Class III	Nitro Compound
Class IV	Chlorate Mixture
Class V	Fulminate
Class VI	Ammunition
Class VII	Fireworks

and when an explosive falls within the description of more than one Class, it shall be deemed to belong exclusively to the latest of the Classes within the description of which it falls.

2. Where percentages are stated in the definition of an authorised explosive, they refer to the percentage by weight of the finished explosive.

The above Classes are further defined as follows .—

Class I. Gunpowder

The term " gunpowder " means exclusively gunpowder ordinarily so called.

Class II. Nitrate Mixture

The term " nitrate mixture " means any preparation, other than gunpowder ordinarily so called, formed by the mechanical mixture of a nitrate with any form of carbon or with any carbonaceous substance not possessed of explosive properties, whether sulphur be or be not added to such preparation, and whether such preparation be or be not mechanically mixed with any other non-explosive substance.

By Order in Council No. 1B, any explosive containing a perchlorate and not included in Classes III, IV or V shall be deemed to belong to Class II (Nitrate Mixture Class).

Every blasting explosive in this Class, in which ammonium nitrate, sodium nitrate or sodium chloride are used as ingredients, shall be contained in cartridge wrappers or cases (or in 5 lb inner packages) made thoroughly waterproof with melted paraffin or other suitable waterproofing material.

Class III. Nitro Compound

The term " nitro compound " means any chemical compound possessed of explosive properties, or capable of combining with metals to form an explosive compound, which is produced by the chemical action of nitric acid (whether mixed or not with sulphuric acid) or of a nitrate mixed with sulphuric acid upon any carbonaceous substance, whether such compound is mechanically mixed with other substances or not

Every explosive in this Class and every explosive ingredient thereof shall be so thoroughly purified and otherwise of such character as to satisfy a test known as the Heat Test, and specified in a Memorandum signed by a Government Inspector and dated the 2nd February, 1914

Every blasting explosive in this Class, in which ammonium nitrate, sodium nitrate, sodium chloride or nitro-glycol are used as ingredients, shall be contained in cartridge wrappers or cases (or in 5 lb inner packages) made thoroughly waterproof with melted paraffin or other suitable waterproofing material.

Blasting explosives in this Class marked " S " may be sheathed on the outside of the cartridge but not at the ends with an approved sheathing material. The outer wrapper of any sheathed cartridge shall be sufficiently strong to prevent the escape of any of the sheathing material when the cartridge is submitted to the jolting test. If fireproofing material is used for the outer wrapper it must not interact in any way with the sheathing material. Provided that when sodium bicarbonate is used as a sheathing material the cartridge shall be throughly waterproofed with paraffin wax or a mixture of ceresine and rosin.

The nitro-compound class has two divisions.

Division 1 comprises any chemical compound or mechanically mixed preparation which consists either wholly or partly of nitro-glycerine or of some other liquid nitro-compound.

Every explosive in this Division shall be of such character and consistency as not to be liable to liquefaction or exudation.

Every blasting explosive in this Division, other than those manufactured exclusively for export, shall be capable of passing the following non-freezing test, viz. the explosive after being kept at a temperature of — 10° C. for 12 hours, seeded with frozen nitro-glycerine and then maintained at a temperature of — 10° C. for a period of 10 days, shall not show any signs of being frozen.

An explosive in this Division which is required to be issued in waterproof inner packages may be exempted from such requirement by special authority, when and so long as the conditions of such authority are observed.

The term "low freeze nitro-glycerine" used in the definitions of explosives in this Division shall mean a mixture of nitro-glycerine with nitro-poly glycerine or nitro-glycol or both of them.

Division 2 comprises any nitro-compound as before defined, which is not comprised in the first division.

Class IV. Chlorate Mixture

The term "chlorate mixture" means any explosive containing a chlorate.

Every explosive in this Class, and every explosive ingredient thereof, shall be so thoroughly purified and otherwise of such character as to satisfy a test known as the Heat Test, and specified in a Memorandum signed by a Government Inspector and dated the 2nd February, 1914

Every blasting explosive in this Class, in which ammonium nitrate, sodium nitrate or sodium chloride are used as ingredients, shall be contained in cartridge wrappers or cases (or in 5 lb. inner packages) made thoroughly waterproof with melted paraffin or other suitable waterproofing material.

The chlorate mixture class has two divisions.

Division 1 comprises any chlorate preparation which consists partly of nitro-glycerine or of some other liquid nitro compound.

Provided that every explosive in this Division shall be of such character and consistency as not to be liable to liquefaction or exudation.

Division 2 comprises any chlorate mixture as before defined which is not comprised in the first division

Class V. Fulminate

The term "fulminate" means any chemical compound or mechanical mixture, whether included in the foregoing classes or not, which, from its great susceptibility to detonation, is suitable for employment in percussion caps or any other appliances for developing detonation, or which, from its extreme sensibility to explosion, and from its great instability (that is to say, readiness to undergo decomposition from very slight exciting causes), is especially dangerous

This class consists of two divisions.

Division 1

Division 1 comprises such compounds as the fulminates of silver and of mercury, and preparations of these substances, such as are used in percussion caps; and any preparation consisting of a mixture of a chlorate with phosphorus, or certain descriptions of phosphorus compounds, with or without the addition of carbonaceous matter, and any preparation consisting of a mixture of a chlorate with sulphur, or with a sulphuret, with or without carbonaceous matter

Division 2

Division 2 comprises such substances as the chloride and the iodide of nitrogen, fulminating gold and silver, diazobenzol, and the nitrate of diazobenzol

Class VI. Ammunition

The term "ammunition" means an explosive of any of the foregoing classes when enclosed in any case or contrivance, or otherwise adapted or prepared so as to form a cartridge or charge for small arms, cannon, or any other weapon, or for blasting, or to form any safety or other fuze for blasting, or for shells, or to form any tube for firing explosives, or to form a percussion cap, a detonator, a fog signal, a shell, a torpedo, a war rocket, or other contrivance other than a firework

The term "percussion cap" does not include a detonator.*

The term "detonator" means a capsule or case which is of such strength and construction and contains an explosive of the fulminate-explosive class in such quantity that the explosion of one capsule or case will communicate the explosion to other like capsules or cases

The term "safety fuze" means a fuze for blasting which burns and does not explode, and which does not contain its own means of ignition and which is of such strength and construction and contains an explosive in such quantity that the burning of such fuze will not communicate laterally with other like fuzes.

The term "safety cartridges" means cartridges for small arms of which the case can be extracted from the small arm after firing, and which are so closed as to prevent any explosion in one cartridge being communicated to other cartridges

The ammunition class has three divisions.

Division 1. Known as the Safety Class

Division 2. Comprises any ammunition as before defined which does not contain its own means of ignition, and is not included in Division 1

Division 3. Comprises any ammunition as before defined which contains its own means of ignition and is not included in Division 1.

Class VII. Firework

The term "firework" comprises firework composition and manufactured fireworks

Division 1—Firework Composition

The term "firework composition" means any chemical compound or mechanically mixed preparation of an explosive or inflammable nature which is used for the purpose of making manufactured fireworks, and is not included in the former classes of explosives, and also any star and any coloured fire composition. O in C. No 1 (a)

Division 2.—Manufactured Fireworks

Manufactured fireworks, consisting of any explosives of the foregoing classes, and any firework composition, when such explosive or composition is enclosed in any case or contrivance, or is otherwise manufactured so as to form a squib, cracker, serpent, rocket (other than a war rocket), maroon, lance, wheel, Chinese fire, Roman candle, or other article specially adapted for the production of pyrotechnic effect, or pyrotechnic signals, or sound signals Provided that a substantially constructed and hermetically closed metal case containing not more than 1 lb of coloured fire composition of such a nature as not to be liable to spontaneous ignition shall be deemed to be a manufactured firework

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* In consequence of the results of experiments carried out, it has been decided that a percussion cap can only be properly classed as such if it contains less than 0·6 gram of a composition of the 1st Division of the 5th (Fulminate) Class of which not more than 25 per cent consists of fulminate of mercury, or less than 0·5 gram of any other explosive of the 1st Division of the 5th (Fulminate) Class It has been further decided that percussion caps shall not be classed as such when they contain anvils or have their composition unprotected by tin foil or other suitable substances, as under those circumstances they are liable to explode *en masse*.

" Shop Goods "

1. The expression " Shop Goods " as defined by the Home Office (O. in C. 16A dated 11th May, 1906, made under the Explosives Act, 1875) shall include :

Coloured fires and lights,
Balloon Fireworks,
Roman Candles,
Wheels,
Bouquets,
Saxons,
Blue Devils,
Black Jacks,
Flower-pots,
Fountains,
Starlights,
Tourbillions,
Suns,
Devil-among-Tailors,
Gerbs,
Catherine Wheels,
Scintillettes,

Amorces
Throwdowns } Toy Fireworks,
Crackshots
Squibs,
Prince of Wales Feathers,
Lances,
Crackers,
Snakes,
Golden rain,
Portfires or Blue Candles,
Lightning Paper in Envelopes,
Mines
Maroons } Other than those specified below as excluded.
Rockets
Jack-in-the-boxes—Other than those specified below as excluded.

and other similar fireworks which are not liable to explode violently

The said expression " Shop Goods " shall *not* include —

Socket Distress Signals,
Socket Light Signals,
Sound Socket Signals,
Shells,
Aerial Maroons,
Maroon Rockets,
Guncotton Rockets,
Flight of Rockets,

Mines
Jack-in-the-boxes } above 2 lb gross weight.
Feu de Joie
Maroons exceeding 4 oz. gross weight,
Chinese Crackers exceeding 4 inches in length,

or any firework (other than a toy firework) containing its own means of ignition, whether or not named in the foregoing list of " Shop Goods ", or any firework liable to explode violently

The expression " toy fireworks " means a firework containing such small quantity of explosive of the Fifth (Fulminate) Class as is specified in the definition of such firework in a List of Authorised Explosives signed by a Government Inspector and in force for the time being, and includes amorces, throwdowns and crackshots

THE PACKING AND MARKING OF EXPLOSIVE FOR CONVEYANCE RULES, 1949,

STATUTORY INSTRUMENT No. 798 (1949)

GENERAL

1 These Rules may be cited as the Packing of Explosives for Conveyance Rules, 1949, and shall come into operation on 23rd May, 1949.

2. The Interpretation Act, 1889,* shall apply to the interpretation of these Rules as it applies to the interpretation of an Act of Parliament, and Section 38 of the said Act shall apply as if these Rules were an Act of Parliament and as if any Rules repealed by these Rules were Acts of Parliament repealed by an Act of Parliament.

3. The Rules with respect to the packing of explosive for conveyance made by the Secretary of State and dated the tenth day of June, 1904,* and the Rules amending the said Rules made by the Secretary of State and dated respectively the eighteenth day of March, 1911,† and the seventh day of November, 1922,‡ are hereby repealed and in lieu thereof the following Rules shall be observed with respect to the packing of explosive for conveyance.

RULES AS TO THE PACKING OF EXPLOSIVES FOR CONVEYANCE

4. (1) In these Rules—

the expression " authorised explosive " means any explosive for the time being authorised under the Explosives Act, 1875,§ to be manufactured for the general sale or to be imported for general sale whether with or without a licence ;

the expression " Government inspector " means an inspector appointed by the Secretary of State under and for the purposes of the Explosives Act, 1875 ,

the expression " inner package " means a substantial case, bag, canister or other receptacle, so made and closed as to prevent any explosive from escaping ,

the expression " outer package " means a box, barrel, case or cylinder of wood, metal or other solid material, of such strength, construction and character that it will not be broken or accidentally opened, nor become defective or insecure whilst being conveyed, and will not allow any explosive to escape ;

the expression " propellant " means an authorised explosive comprised in Class III adapted and intended exclusively for use as a propelling charge in cannon or small arms

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* 52 and 53 Vict., c. 63.
* S.R. & O., 1904 (No. 1221), p. 137.
† S.R. & O., 1911 (No 317), p. 52.
‡ S.R. & O., 1922 (No 1240), p. 253.

§ 38 & 39 Vict., c. 17.

(2) In these Rules any reference to a class of explosive or to a division of a class, either generally or to a class or division particularly numbered shall be construed as a reference to a class or division, or to a class or division so numbered, into which explosives have been classified by any Order in Council made under section 106 of the Explosives Act, 1875, and for the time being in force.

5. The interior of every outer and inner package shall be clean and free from grit.

6. Iron or steel shall not be used in the construction of any outer or inner package unless it is so covered as to prevent it being or becoming exposed:

Provided that this Rule shall not apply to the packing of explosives comprised in Division 1 of Class VI and in Division 2 of Class VII

7. No outer or inner package shall—

(*a*) contain more than one explosive:

(*b*) contain any other article or substance except for the purpose of packing in accordance with these Rules:

Provided that there may be packed in the same outer package:—

(i) an inner package containing a propellant and an inner package containing a different propellant or gunpowder; or

(ii) an inner package containing an explosive comprised in Division 1 of Class VI and any article or substance which is not of an inflammable or explosive nature or liable to cause fire or explosion.

8 Nothing in these Rules shall be deemed to prohibit the use of an inner or outer package in addition to those required to be used by these Rules:

Provided that no such additional package shall be used if it is of a description or type which has been prohibited in writing by a Government inspector from being used for the purpose.

9. An authorised explosive comprised in the Class and Division, if any, or of the name or description specified in the first column of the Schedule to these Rules shall be packed in accordance with the method specified opposite thereto in the second column of the said schedule, and the amount of such explosive packed in any one outer package and into any one inner package shall not exceed the quantity, if any, specified opposite thereto in the third and fourth columns of the said Schedule respectively.

10 The following explosives, that is to say:—

(*a*) any explosive other than an authorised explosive,

(*b*) any explosive comprised in Division 1 of Class V which is of such a character that it cannot be packed in a thoroughly wet condition,

(*c*) any explosive of Division 2 of Class V other than barium tri-nitro-resorcinate, lead di-nitro-resorcinate, lead tri-nitro-resorcinate and tetrazene, and

(*d*) fuseheads of Division 2 of Class VI,

shall be packed in accordance with such methods as a Government inspector may in writing have required with respect to that explosive, and any conditions in respect to the packing which a Government inspector deems necessary to meet the special requirements of the case may be imposed by him and shall be complied with.

11 (1) On the outside of the outermost package there shall be displayed in conspicuous characters by means of a brand or securely attached label* or other method the following marking, that is to say, the word "Explosive", the name of the explosive, the number of the class and division, if any, in which it is comprised and the name of the manufacturer or sender:—

Provided that:—

(*a*) in the case of cartridges or charges for cannon, shells, mines, blasting or other like purpose which do not contain their own means of ignition, the marking displayed shall be that which would be required for the explosive therein if it were not made up as such cartridge or charge;

(*b*) in the case of safety fuze or gunpowder the word "Explosive" and the number of the class and division may be omitted.

(2) In addition to the markings required by paragraph (1) of this Rule to be displayed, there shall be displayed in the same manner the following markings, that is to say:—

(*a*) in the case of explosive comprised in Class III or IV, the date of manufacture or issue from the factory or such sign indicating either date as may be approved by a Government inspector;

(*b*) in the case of explosives comprised in Division 1 of Class VI, other than safety fuze the words "Not liable to explode in bulk."

(3) Where more than one explosive is contained in the same outer package, there shall be a separate marking displayed in respect of each explosive.

12 Exemption from any provision of these Rules may be granted by special authority, and any such authority may be granted on such conditions as it is, in the opinion of a Government inspector, necessary to impose in the circumstances, and any conditions so imposed shall be complied with.

In this Rule the expression "special authority" means a written authority given by a Government inspector in any special case.

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* See specimen label, page 229.

SCHEDULE OF PACKINGS FOR COMMERCIAL EXPLOSIVES

(see para. 9, page 26)

Class or Explosive	Method of Packing	Maximum amount in any one outer package	Maximum amount in any one inner package
Class I	In an inner as well as an outer package except where the weight of explosive to be conveyed in one load is not more than 5 lb when an inner package is not required	When gunpowder and a propellant are packed together, 50 lb., otherwise 100 lb	When gunpowder and a propellant are packed together, 25 lb. otherwise 100 lb.
Class II	As for Class I.	50 lb	50 lb.
Class III, Division 1	As for Class I, so however that the inner or outer package or, if there is only an outer package, that package, shall be thoroughly waterproof, and so that no metal shall be used in the construction of any package, except that nails or wire binding coated with or made of brass, zinc or other soft metal may be used for securing the outer package, and wire stitching may be used for securing an inner package if the wire is effectively prevented from coming into contact with the explosive by means of a sheet of stout cardboard or otherwise.	50 lb	50 lb
Class III, Division 2, other than (i) guncotton so wetted with water as to be absolutely uninflammable, (ii) cyclotrimethylene trinitramine (R.D.X.), (iii) penta - erythritol - tetranitrate (P.E.T.N.), and (iv) tri-nitro-resorcinol (styphnic acid)	As for Class I	50 lb	50 lb.
Guncotton so wetted with water as to be absolutely uninflammable.	As for Class I, so however that the inner or outer package, or both packages or, if there is only an outer package, that package, shall be of such a nature and so closed as to prevent any material loss of water.	Unlimited.	Unlimited.
Cyclo-trimethylene trinitramine (R.D.X.)	In an inner as well as an outer package, the explosive being so wetted with water that there is not less than 25 per cent. of water by weight in the wet explosive, the inner and outer packages being of such a nature and so closed as to prevent any material loss of water	50 lb.	50 lb
Penta - erythritol - tetranitrate (P.E.T.N.)	In an inner as well as an outer package, the explosive being so wetted with water that there is not less than 25 per cent. of water by weight in the wet explosive, the inner and outer packages being of such a nature and so closed as to prevent any material loss of water.	50 lb	50 lb.
Tri-nitro-resorcinol (Styphnic acid)	In an inner as well as an outer package, the explosive being so wetted with water that there is not less than 20 per cent. of water by weight in the wet explosive, the inner and outer packages being of such a nature and so closed as to prevent any material loss of water	50 lb.	50 lb.
Class IV, Division 1	As for Class III, Division 1.	50 lb.	50 lb.
Class IV, Division 2 ..	As for Class I.	50 lb.	50 lb.
Class V, Division 1, other than explosives of such character that they cannot be packed in a thoroughly wet condition.	In an inner package, being a bag permeable to water, in a case containing sufficient water to secure that the explosive is kept constantly wet, the case being in an outer package containing sufficient water constantly to surround the case, both the case and the outer package being of such material and so constructed as not to permit the water to escape	200 lb	25 lb.
Explosives comprised in Class V, Division 1, of such character that they cannot be packed in a thoroughly wet condition.	In accordance with a method required under Rule 10 of these Rules.	—	—

Class or Explosive	Method of Packing	Maximum amount in any one outer package	Maximum amount in any one inner package
Class V, Division 2, other than (i) barium tri-nitro-resorcinate, (ii) lead di-nitro-resorcinate, (iii) lead tri nitro-resorcinate, and (iv) tetrazene.	In accordance with a method required under Rule 10 of these Rules.	—	—
Barium tri-nitro-resorcinate, lead di-nitro-resorcinate, lead tri-nitro-resorcinate, and tetrazene.	As for Class V, Division 1, other than explosives of such character that they cannot be packed as a thoroughly wet condition.	120 lb.	15 lb.
Class VI, Division 1, other than bulleted cartridges of a calibre exceeding 0·5 inch	In an outer package.	Unlimited	—
Bulleted cartridges comprised in Class VI, Division 1, of a calibre exceeding 0·5 inch	In an outer package so that the point of any bullet cannot come into contact with the cap of any cartridge.	Unlimited.	—
Class VI, Division 2, other than (i) cartridges and charges for cannon, shells, mines, blasting or other like purposes, and (ii) fuzeheads.	In an outer package.	100 lb.	—
Class VI, Division 2, when made up into cartridges or charges for cannon, shells, mines, blasting or other like purposes	In like manner as is required for the same explosive when not so made up and, where an inner as well as an outer package is required the enclosing case of a cartridge or charge shall, if it is within the definition of inner package in these Rules, be deemed to be an inner package, but where an outer package only is employed, shall not be deemed to be an outer package.	Maximum amount allowed for the same explosive when not so made up.	Maximum amount allowed fo the same explosive when not so made up.
Fuzeheads comprised in Class VI, Division 2.	In accordance with a method required under Rule 10 of these Rules.	—	—
Class VI, Division 3, other than (i) bulleted cartridges of a calibre exceeding 0·5 inch, and (ii) detonators	In an inner as well as an outer package.	50 lb.	2 lb. or 10 in number, whichever may be the greater.
Bulleted cartridges comprised in Class VI, Division 3, of a calibre exceeding 0·5 inch	In an inner as well as an outer package the cartridges being so packed in the inner package that the point of any bullet cannot come into contact with the cap of any cartridge.	50 lb.	2 lb. or 10 in number, whichever may be the greater.
Detonators, other than electric detonators.	(a) In an inner as well as an outer package, and the inner package, if of metal or other solid material shall be lined throughout with paper or other soft material ; a layer of felt or other soft yielding material shall be placed on top of and underneath the detonators and so secured that both ends of the detonators shall at all times be resting on and be covered by the said layer ; the detonators and all spaces in the inner package may be filled so far as practicable with fine sawdust or other similar material ; and, except as provided in paragraph (b) below, the inner packages shall be placed inside a substantial case of wood or metal so made and closed as to prevent any of the inner packages from escaping therefrom, and such case shall be placed inside the outer package in such manner and so secured as to leave a space of not less than 3 inches between the case and every part of the interior of the outer package, and the said space shall either be kept clear with a light framework or battens of wood to keep the said case in position in the outer package, or may be filled with sawdust, straw or other similar material ; any outer package when the number of detonators therein exceeds 5,000, being provided with handles or other suitable contrivance by means of which it can safely and conveniently be carried.	10,000 in number	100 in number.
	(b) Where the number to be conveyed in one load does not exceed 1,000, the requirements with regard to placing the inner packages in a case inside the outer package need not be observed.	1,000 in number	100 in number
Electric detonators	In an inner as well as an outer package ; any outer package, when the number of detonators therein exceeds 3,000, being provided with handles or other suitable contrivance by means of which it can safely and conveniently be carried.	5,000 in number	100 in number.
Class VII, Division 1	In an inner as well as an outer package, the inner package being hermetically closed.	20 lb.	1 lb.
Class VII, Division 2	In an outer package.	100 lb.	—

CLASSIFIED LIST OF COMMERCIAL EXPLOSIVES SHOWING HOME OFFICE CLASS AND DIVISION, EQUIVALENT SERVICE CLASSIFICATION AND STOWAGE CONDITIONS REQUISITE FOR EACH ITEM

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Ajax "S"	III 1	2	M.S.B.
Aluminite No. 1	III 2	4	M.S.B.
Aluminite No. 2	III 2	4	M.S.B.
Aluminite No. 3	III 2	4	M.S.B.
Aluminium Torches	VII 2	9	A.S.P.
Aluminium Torches, Standard Brand	VII 2	9	A.S.P.
Amatol	III 2	4	M.S.B.
Amberite No. 2	III 2	4	M.S.B.
(b) American Ballistite	III 1	2	M.S.B.
Ammonal	III 2	4	M.S.B.
Ammonal No. 3	III 2	4	M.S.B.
Ammonal No. 5	III 2	4	M.S.B.
Ammonal "M"	III 2	4	M.S.B.
Ammonal 704	III 2	4	M.S.B.
Ammon Dynamite	III 1	2	M.S.B.
Ammonex	VI 2	6	O.A.S.
Ammon Gelatine	III 1	2	M.S.B.
Ammon Gelatine Dynamite	III 1	2	M.S.B.
Ammon Gelignite	III 1	2	M.S.B.
Ammon Gelignite No. 2	III 1	2	M.S.B.
Ammon Gelignite No. 3	III 1	2	M.S.B.
Ammonium Picrate	III 2	1	M.S.L.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(a) Amorces	VII 2	9	A.S.P.
A.N. Gelatine Dynamite "75"	III 1	2	M.S.B.
A.N. Gelignite "60"	III 1	2	M.S.B.
A.N. Gelignite "50"	III 1	2	M.S.B.
A.N. Gelignite "40"	III 1	2	M.S.B.
Antifrost Ammon Gelatine Dynamite	III 1	2	M.S.B.
Antifrost Ammon Gelignite	III 1	2	M.S.B.
Antifrost Ammon Gelignite No. 2	III 1	2	M.S.B.
Antifrost Ammon Gelignite A, B, C, E, F, G	III 1	2	M.S.B.
Antifrost Blasting Gelatine	III 1	2	M.S.B.
Antifrost Gelammonite No. 2 "S"	III 1	2	M.S.B.
Antifrost Gelatine Dynamite	III 1	2	M.S.B.
Antifrost Gelignite	III 1	2	M.S.B.
Antifrost Gelignite No. 2	III 1	2	M.S.B.
Antifrost Nitrox No. 2 "S"	III 1	2	M.S.B.
Antifrost N.S. Gelatine Dynamite	III 1	2	M.S.B.
Antifrost N.S. Gelignite	III 1	2	M.S.B.
Antifrost N.S. Gelignite No. 2	III 1	2	M.S.B.
Antifrost Penrhyn Powder "S"	III 1	2	M.S.B.
Antifrost Penrhyn Powder No. 2 "S"	III 1	2	M.S.B.
Antifyre Percussion Caps	VI 1	6	O.A.S.(C)
Antislak P "S"	III 1	2	M.S.B.
Arctic Dynamite	III 1	2	M.S.B.

(a) These explosives are only authorised for transport when packed in a particular manner.

(b) This explosive becomes Group 1 with stowage conditions M.S.A. if it is not packed in an airtight metallic container (tuning sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
(b) Ardeer Ballistite	III 1	2	M S.B
Ardeer Cordite	III 1	3	M S.B
Ardeer Propellant Composition No 2 ("A.P.C No 2")	III 2	3	M.S B
Ardex	III 2	4	M S.B
(b) Armorite	III 1	2	M.S B
A.R.P. Practice Incendiary Bombs	VII 2	9	A S P.
A.1 Rounkol	III 1	2	M S B.
A.1 Rounkol (C)	III 1	2	M S B
A/S Indicators Training No 1	VII 2	9	A.S.P.
Auxiliary Cartridges	VI 2	6	O.A.S
Axite No 3	III 1	2	M S B
Azofog Insecticidal Smoke Generator	VII 2	11	O A S.(D)
(b) Ballistite	III 1	2	M S B
(b) Ballistite A.16	III 1	2	M S B.
(b) Ballistite B 16	III 1	2	M.S.B
(b) Ball Powder	III 1	2	M.S.B.
Baratol	III 2	4	M S.B.
* Barium Tri-nitro-resorcinate	V 2	10	M S.D.
(a) Battery Pockets	VI 1	6	O.A.S (C)
Belex	III 1	2	M S B.
Belex 1 1	III 1	2	M.S B.
Belex 2.2	III 1	2	M.S B.
Belex 3.3	III 1	2	M.S.B
Belex 4 4	III 1	2	M.S B
Belex 5.5	III 1	2	M.S.B
(a) Belisha Beacons	VII 2	9	A S.P.
Bengal Sparklers (1st, 2nd, 3rd, 4th, 5th Definitions)	VII 2	9	A.S.P.
Bengal Torches (1st, 2nd, 3rd Definitions)	VII 2	9	A.S P.
Bettacol "S"	III 1	2	M.S.B
Bickford's Patent Volley Firers	VI 2	6	O.A.S
Bird Scarers	VII 2	9	A.S P
Blackpowder Igniter Wick	VI 2	1	O A.S
Blastine No 1	III 2	4	M.S B
Blasting Abelite	III 2	4	M.S.B.
Blasting Gelatine	III 1	2	M.S.B
Blasting Gelatine (A)	III 1	2	M S.B.
Blasting Matagnite	III 1	2	M S.B
Bombs, Aircraft, Target Identification	VII 2	9	A.S P.
Bombs, Practice Flash	VI 2	9	A.S P.
Brock's Bengals	VII 2	9	A.S.P.
Brock's Igniters	VII 2	9	A S.P
Brock's Smoke Generators Types B 1, B.2, B 3, and B 4	VII 2	9	A.S.P
Burrowite	III 2	4	M S.B.
Burrowite No 1	III 2	4	M S.B.
Burrowite No 2	III 2	4	M S.B
Burrowite No 3	III 2	4	M S.B

* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No 798 (1949)

(a) These explosives are only authorised for transport when packed in a particular manner

(b) This explosive becomes Group I with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

(a) These explosives are only authorised for transport when packed in a particular manner

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Burrowite G.N.	III 2	4	M S B
Burrowite M.B. Rex	III 2	4	M.S.B.
Burrowite Super Rex	III 2	4	M.S.B.
Candles, Smoke, Yellow	VII 2	11	O.A S (D)
Capped (Detonator) Safety Fuze	VI 3	10	M S.D.
Capped Fuzes with Connectors	VI 3	10	M S.D.
Carrick Short Delay Detonators	VI 3	10	M.S.D.
Cartridges for Cannon, etc.	VI 2	3	M.S B.
Cartridges for Emergency Undercarriage Lowering Device	VI 2	6	O.A.S
Cartridges for Velocity Power Driver	VI 3	6	O.A.S
Cartridges for Small Arms, O in C. No. 1	VI 2 & 3	6	O.A.S.
Cartridges, Illuminating	VII 2	9	A.S P.
Cartridges, Safety	VI 1	6	O.A.S (C)
Cases, Cartridges, Safety Capped (Empty)	VI 1	6	O.A.S (C)
Cases for Turbo-Starter Cartridges (Empty) Primed	VI 1	6	O.A.S (C)
C.D.B	III 1	3	M.S B.
C.D.B Rocket Motors	VI 2	6 (boxed) 8 (loose)	O.A.S.
Celmonal	III 2	4	M.S B.
Celmonal X	III 2	4	M.S B
Celmonite	III 2	4	M.S B
Celmonite Ripping	III 2	4	M.S B.
Chemical Heater Igniters	VI 2	6	O.A.S.
Chemical Heater Igniters, Type B	VI 2	6	O.A.S.
(b) Chilworth Smokeless Powder No 2	III 1	2	M.S B
(b) Clermonite Powder No. 2	III 2	2	M S B.
Colespex	III 1	2	M.S B.
Colex No. 1 " S "	III 1	2	M.S.B.
Colex No 2 " S "	III 1	2	M S B.
Colliery Explosive " C.7 "	III 2	4	M.S.B.
Collodion Cotton	III 2	4	M.S B.
Coloured Fire Torches	VII 2	9	A.S.P.
Coloured Flame Torches	VII 2	9	A.S P.
Coloured Smoke Candles	VII 2	9	A.S.P.
Coloured Sparklers	VII 2	9	A.S P
Commercial Waterproof Primers	III 2	4	M S.B.
Compex No. 1	III 1	2	M S.B.
Compex No. 2	III 1	2	M S.B.
Composition P.N. (Type A)	IV 2	1	M.S.A.
Composition P.N. (Type B)	II		1	M.S.A.
Composition P.N. (Type C)	IV 2	11	U.C.S.
Composition P.N. (Type D)	II	11	O.A.S (D)
Composition S R. (Type A)	IV 2	1	M S.A.
Composition S R. (Type B)	II	1	M.S.A.
Composition S R. (Type C)	IV 2	11	O.A.S.(D)
Composition S R. (Type D)	II	11	O A.S (D)
Confetti Bombs	VII 2	9	A.S.P.
Cooke's Explosive No 104	III 2	4	M S.B

(b) This explosive becomes Group I with stowage conditions M.S.A if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(a) Co-precipitated Lead Azide/ Lead De-nitro-resorcinate	V 2	10	M.S.D
Cordeau Bickford	VI 2	4	O.A.S.
Cordite	III 1	3	M S.B.
Cordite A	III 1	3	M S.B.
Cordite A.N.	III 1	3	M.S.B.
Cordite A.S N.	III 1	3	M.S B.
Cordite C.D.	III 1	3	M.S B.
Cordite C.D.P.	III 1	3	M.S B.
Cordite D.B.P	III 1	3	M S B.
Cordite H.W	III 1	3	M.S.B.
Cordite M.D	III 1	3	M S B.
Cordite N	III 1	3	M S.B.
Cordite N.K.	III 1	3	M.S.B.
Cordite N.P	III 1	3	M.S.B.
Cordite N.Q.	III 1	3	M S B.
Cordite N Q.K.	III 1	3	M S.B.
Cordite N.Q.P.	III 1	3	M.S B.
Cordite R.D.N./A.Q	III 1	3	M S B.
Cordite R.D.Q.	III 1	3	M.S.B.
Cordite W.	III 1	3	M S.B.
Cordite W.M.	III 1	3	M S B.
Cordtex	VI 2	1	O.A S.
(a) Crack Shots	VII 2	9	A.S P.
Curtis's and Harvey's Safety Electric Fuzes	VI 1	6	O.A.S (C)

(a) These explosives are only authorised for transport when packed in a particular manner.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
* Cyclotrimethylene Trinitramine (R.D.X.)	III 2	4	M.S.B
(b) D.B. Casting Powder	III 2	2	M S.B
(b) D.B.C. Casting Powder	III 1	2	M.S.B
Delay Arming Cartridge Unit	VI 3	6	O.A.S.
Delay Composition	II	1	M S.A.
Delay Detonators	VI 3	10	M.S.D.
Delay Elements	VI 2	1	M S.A
Delay Puffers	VI 3	10	M.S D.
Delay Fuze Assembly (10 Seconds)	VI 1	6	O.A.S (C)
Denespex	III 1	2	M.S.B
Denespex "P"	III 1	2	M S B
Detonating Fuze	VI 2	4	O.A.S
Detonating Fuze Boosters (D.F. Boosters)	VI 2	1	M S.A.
Detonating Relays	VI 3	10	M.S.D.
Detonators, O. in C No 1	VI 3	10	M S.D.
Detonators, Electric	VI 3	10	M S D.
Detonators for 20 mm. Hispano Ammunition	VI 3	10	M.S.D.
Detonator Time Fuze	VI 3	10	M.S.D.
Detonita	III 1	2	M.S.B.
§ Di-nitro-phenol	III 2	4	M S.L.
† Di-nitro-resorcinol	III 2	4	M S L.

* Must be wetted with not less than 25 per cent. of water calculated on the wet material.

§ Di-nitro-phenol containing 15 per cent. of water, calculated on the wet material, is not explosive.

† Di-nitro-resorcinol containing 33⅓ per cent. of water, calculated on the wet material, is non-explosive.

(b) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Distress Signal Rockets	VII 2	9	A.S P.
Douglas Powder " S "	III 2	4	M S.B
Driftex " P " " S "	III 1	2	M.S B
Driftex " S "	III 1	2	M S B
Drogue Ejector Cartridges	VI 1	6	O.A.S.(C)
DuPont Extra C	III 1	2	M S B
DuPont Extra D	III 1	2	M S B
DuPont Gelatin L.F.	III 1	2	M S B
(*b*) DuPont Powder No. 15	III 2	2	M.S B
(*b*) DuPont Powder No 16	III 2	2	M S B.
(*b*) DuPont Powder No. 25	III 2	2	M S B
(*b*) DuPont Smokeless Shotgun Powder	III 2	2	M S B
Duprelite	III 1	2	M.S.B
Duprex	III 1	2	M.S.B
Dynamite	III 1	2	M.S.B.
Dynamite No. 1	III 1	2	M S.B
Dynobel No. 2 " S "	III 1	2	M S B
(*b*) E.C. Sporting Powder	III 2	2	M.S.B
Electric Boosters	VI 3	10	M.S.D.
Electric Detonators	VI 3	10	M S D.
Electric Detonators for Boosters	VI 3	10	M S D.
‡ Electric Fuzes (1st, 2nd, 3rd and 4th Definitions)	VI 2	6	O A.S
Electric Lighters for Igniter Cord	VI 1	6	O.A.S.
Electric Primers	VI 2	6	O A.S.
Electric Seismic Primer	VI 3	10	M.S.D
Electric Sparklers	VII 2	9	A S P.
Electrosounders	VI 3	10	M S.D.
(*a*) Eley Kynoch No. 1A Percussion Cap	VI 1	6	O A.S (C)
(*a*) Eley Kynoch No. 91 Percussion Cap	VI 1	6	O.A.S.(C)
(*b*) Empire Powder	III 2	2	M S.B.
Equamite	III 2	4	M.S.B
Equicol	III 1	2	M.S.B
Equinox	III 1	2	M S.B
Espex	III 1	2	M.S.B
Espex " P "	III 1	2	M.S.B.
Eversoft Ammon Gelignite	III 1	2	M.S.B
Eversoft Blasting Gelatine	III 1	2	M.S.B
Eversoft Gelamex	III 1	2	M.S.B
Eversoft Gelamex No 1	III 1	2	M.S.B.
Eversoft Gelamex No 2	III 1	2	M.S.B.
Eversoft Gelamex No. 2(C)	III 1	2	M S B.
Eversoft Gelamex No. 3	III 1	2	M S.B.
Eversoft Gelamex No 3(C)	III 1	2	M S.B.
Eversoft Gelamex " C "	III 1	2	M S.B.
Eversoft Tees Powder " S "	III 1	2	M.S B.
Excelsior Safety Electric Fuzes	VI 1	6	O A.S (C)

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‡ In any Licence the expression " Electric Fuzes " also includes all Safety Electric Fuzes of Class VI, Division 1.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

(*a*) These explosives are only authorised for transport when packed in a particular manner

(*b*) This explosive becomes Group I with stowage conditions M.S A if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Exploders for Bombs and for Mines	VI 3	1	M S A.
Exploders for Shells, Bombs, Mines, Depth Charges and Torpedoes	VI 2	1	M.S.A.
Exploders for Picric Acid Shells	VI 2	1	M.S.L.
Exploders for Shell	VI 3	1	M S.A.
Explosive C	III 2	4	M.S.B.
(a) Explosive Corks	VII 2	9	A.S P.
Explosive Motors	VI 1	6	O.A S.
Ferrule Igniter for Safety Fuze	VI 1	6	O.A.S.
Filled Bombs and Grenades	VI 2 & 3	7, 7a & 8	O.A.S.
Filled Bombs, Depth Charges, Mines and Torpedoes	VI 2 & 3	7 & 7a	O A.S.
Filled Games	VI 2 & 3	6	O.A.S
Filled Shells	VI 2 & 3	5 & 6	O.A.S.
Fire Detector and Fire Extinguisher Actuator	VI 2	6	O.A.S.
Firework Composition	VII 1	1	M S.A.
Fireworks, Manufactured	VII 2	9	A.S.P.
Flame Detector Cord	VI 1	6	O.A.S (C)
Flames-Float, Delay	VII 2	9	A.S.P.
Flares, Trip-Wire	VII 2	9	A.S.P.
(a) Flashlight Ignition Caps (1st and 2nd Definitions)	VII 2	6	O.A.S
(a) Flashlight Ignition Tape	VII 2	9	A.S P
Flash Sound Signals	VII 2	9	A.S.P
Float Flares	VII 2	9	A.S P.

(a) These explosives are only authorised for transport when packed in a particular manner.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Fog Signals, Railway, O. in C. No. 1	VI 1	6	O.A.S (C)
(b) French T. Powder	III 2	2	M.S B.
Friction Tubes	VI 3	6	O.A.S (C)
* Fulminate of Mercury	V 1	10	M.S.D.
Fuzehead Assemblies	VI 1	6	O.A.S (C)
§ Fuze Heads for Cardox Heaters	VI 2	6	O A.S
§ Fuze Heads for Gasless Delay Detonators	VI 2	6	O.A.S.
§ Fuze Heads for Orion, Venus or Vulcan Patent Safety Electric Fuzes (1st and 2nd Definitions)	VI 2	6	O.A S.
Fuze Igniters	VI 2	6	O A.S
Fuze Lighters (1st, 2nd and 3rd Definitions)	VI 2	6	O.A.S
Fuzes for Shells, Bombs and Flares	VI 2 & 3	6	O.A.S.(C)
Gathurst Powder	III 2	4	M.S.B.
Gelatine	III 1	2	M S.B.
Gelatine (A)	III 1	2	M.S B
Gelatine Dynamite	III 1	2	M.S.B.
Gelex A	III 1	2	M.S.B.
Gelignite	III 1	2	M S.B.
Gelignite (A)	III 1	2	M.S.B
Gelignite No. 2	III 1	2	M.S B.
Gelignol	III 1	2	M.S B.

* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No. 798 (1949)

§ These fuzeheads are only authorised for transport under a special Packing Authority.

(b) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Geobel	III 1	2	M.S.B.
Geobel No. 2	III 1	2	M.S.B.
Geobel No. 3	III 1	2	M.S.B.
Geophex	III 1	2	M.S.B.
(a) Giant Disc Amorces	VII 2	9	A.S.P.
Glasgow Dynamite	III 1	2	M.S.B.
Glasgow Dynamite (A)	III 1	2	M.S.B.
Gloria Torches	VII 2	9	A.S.P.
Gradeley Powder	III 2	4	M.S.B.
Grancol	III 1	2	M.S.B.
(b) Granulated Guncotton Powder	III 2	2	M.S.B.
Granulex	III 1	2	M.S.B.
Guncotton	III 2	1	M.S.A.
Gunpowder	I	1	M.S.A.
H Attachments	VI 2	10	M.S.D.
Hawkite No 2 "S"	III 2	4	M.S.B.
Hawkite No 3 "S"	III 2	4	M.S.B.
Hexachlorethane Smoke Candles	VI 3	11	O.A.S.(D)
High Velocity Gelatin	III 1	2	M.S.B.
(b) Husite	III 2	2	M.S.B.
Hydrobel "S"	III 1	2	M.S.B.
Hydrox Igniter No. 1 Safety Electric Fuze	VI 1	6	O.A.S.(C)
Hydrox Initiator Nos 2, 3 and 4	VI 3	6	O.A.S.

(a) These explosives are only authorised for transport when packed in a particular manner.
(b) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Igniter Cord Connectors	VI 1	6	O.A.S.
Igniters for Grenades	VI 1	6	O.A.S.(C)
Igniters for Hand Grenades	VI 3	10	M.S.D.
Igniters for M.O.C. Cartridges	VI 2	1	M.S.A.
Igniters for M.O.C. Cartridges (Type 7)	VI 2	1	M.S.A.
Igniters, Gunpowder (1st, 2nd and 3rd Definitions)	VI 2	1	M.S.A.
Igniters, Gunpowder, Electric	VI 2	6	O.A.S.
Igniters, Percussion (2nd Definition)	VI 3	6	O.A.S.
Ignitcap Electric Detonator	VI 3	10	M.S.D.
Ignitcap Electric Detonator with H. Attachment	VI 3	10	M.S.D.
Igniters for Rocket Motors	VI 2	—	M.S.A.
(b) Improved Ballistite	III 1	2	M.S.B.
Incendiary Bombs	VI 3	11	O.A.S.(D)
Incendiary Cartridges	VI 2	11	O.A.S.(D)
Incendiary Shells	VII 2	11	O.A.S.(D)
Incendiary Stars	VII 2	11	O.A.S.(D)
Infugel	III 1	2	M.S.B.
Insecticide Smoke Candles	VI 3	11	O.A.S.(D)
Instantaneous Fuze	VI 2	6	O.A.S.
Joke Bombs	VII 2	9	A.S.P.
Joke Cigarettes	VII 2	9	A.S.P.
Kynoch Fog Signal Caps	VI 1	6	O.A.S.(C)

(b) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(a) Kynoch No. 41 Percussion Cap ..	VI 1	6	O.A.S.(C)
(a) Kynoch No. 70 Percussion Cap ..	VI 1	6	O.A.S.(C)
(a) Kynoch No. 81 Percussion Cap ..	VI 1	6	O.A.S.(C)
(a) Kynoch No. 146 Percussion Caps ..	VI 1	6	O.A.S.(C)
(a) Kynoch Rail Car Fog Signals ..	VI 1	6	O.A.S.(C)
* Lachrymatory Generators ..	VI 3	13	S.A.S.(D)
* Lachrymatory Generators Nos. 1 and 2	VI 3	13	S.A.S.(D)
* Lachrymatory Generators (Naval)	VI 3	13	S.A.S.(D) (R)
Landing Flares	VII 2	9	A.S.P.
Large Gas Producing charges (Engine Starters)	VI 2	6	O.A.S.
† Lead Azide	V 2	10	M.S.D.
‡ Lead Di-nitro-resorcinate	V 2	10	M.S.D.
‡ Lead Tri-nitro-resorcinate	V 2	10	M.S.D.
Lesslak	III 1	2	M.S.B.
L.F. Ammonia Dynamite, 40 per cent strength	III 1	2	M.S.B.
L.F. Ammon Gelatine	III 1	2	M.S.B.
L.F. Ammon Gelatine, 90 per cent. strength	III 1	2	M.S.B.
L.F. Blasting Gelatine	III 1	2	M.S.B.
L.F. Detonita	III 1	2	M.S.B.
L.F. Gelatine	III 1	2	M.S.B.
L.F. Gelignite	III 1	2	M.S.B.
L.F. Geobel	III 1	2	M.S.B.
L.F. Geobel No. 2	III 1	2	M.S.B.
Life-boat Parachute Signal Rockets ..	VII 2	9	A.S.P.
L.G. Gelatine	III 1	2	M.S.B.
(b) Light Load Smokeless	III 2	2	M.S.B.
Lightning Paper	VII 2	9	A.S.P.
Lights, Long, Blue (Naval)	VII 2	9	A.S.P.
Lodensite	III 1	2	M.S.B.
Lodensite No. 2	III 1	2	M.S.B.
Lodespex	III 1	2	M.S.B.
Lump-Kol Pellet Powder	II	1	M.S.A.
Magnesium Torches	VII 2	9	A.S.P.
Manufactured Fireworks	VII 2	9	A.S.P.
(b) M.C. Smokeless Powder	III 2	2	M.S.B.
(b) Mechanite	III 1	2	M.S.B.
Military Ammonal	III 2	4	M.S.B.
Military Burrowite	III 2	4	M.S.B.
Military Delay Detonators	VI 3	10	M.S.D.
Military Detonators	VI 3	10	M.S.D.
Mine "M" Alarm Igniters	VI 3	10	M.S.D.
Miners' Portfires	VI 2	9	O.A.S.
Miners' Squibs	VI 2	6	O.A.S.
Minespex	III 1	2	M.S.B.
Minex "S"	III 1	2	M.S.B.

(a) These explosives are only authorised for transport when packed in a particular manner.

* Not for general sale.

† This explosive is only authorised for transport under a Special Packing Authority.

‡ These explosives are only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No. 798 (1949).

(b) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
(*a*) M O.C. Cartridges (Type 1)	VI 1	6	O.A.S.(C)
M.O.C. Cartridges (Type 2)	VI 2	6	O.A.S
M O.C. Cartridges (Type 3)	VI 3	6	O.A S.
(*a*) M.O.C. Cartridges (Type 4)	VI 1	6	O.A.S (C)
M O C. Cartridges (Type 5)	VI 1	6	O.A S.
(*a*) M O.C. Cartridges (Type 6)	VI 1	6	O.A S.(C)
M.O.C. Cartridges (Type 7)	VI 2	6	O A S
M.O C. Cartridges (Type 8)	VI 2	6	O A.S
(*a*) M.O.C. Cartridges (Type 9)	VI 1	6	O.A.S
M.O.C. Cartridges (Type 10)	VI 2	6	O.A S.
M O.C. Cartridges (Type 11)	VI 2	6	O.A.S.
(*b*) Modified E.C. Powder	III 2	2	M.S B
(*b*) Modified Neodisc	III 2	2	M.S.B.
(*b*) Modified Neoflak	III 2	2	M.S.B
(*b*) Modified Smokeless Diamond	III 2	2	M.S.B
Monobel No. 1	III 1	2	M S B
Morcol	III 1	2	M S.B.
Mortar Parachute Signals	VII 2	9	A.S.P.
Multiple Detonators, Type V	VI 3	10	M S D.
(*b*) N.C. (Y)	III 2	2	M.S B.
(*b*) Neodisc	III 2	2	M.S.B.
(*b*) Neoflak	III 2	2	M S B
(*b*) Nitrated Guncotton	III 2	2	M S B

(*a*) These explosives are only authorised for transport when packed in a particular manner
(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Nitrocellulose	III 2	1	M.S A
(*b*) Nitrocellulose Cannon Powder	III 2	2	M.S B.
(*b*) Nitrocellulose Rifle Powder	III 2	2	M S B.
Nitro-Cotton	III 2	1	M S A
* Nitromethane	III 2	1	U.C S.
Nitropolystyrene	III 2	4	M S B
Nitrovene	III 2	4	M.S B.
(*a*) No. 41 Percussion Cap	VI 1	6	O.A.S (C)
No. 2 Smoke Floats	VI 2	11	O A.S (D)
(*b*) Nobel Acurex Powder	III 2	2	M.S B.
(*b*) Nobel Acurim Neonite	III 2	2	M S B
(*b*) Nobel Acurim Neonite No. 2	III 2	2	M.S B
(*b*) Nobel Cadet Neonite	III 2	2	M S.B
(*b*) Nobel C K Powder No 1	III 1	2	M S B.
(*b*) Nobel C K. Powder No 2	III 1	2	M S.B.
(*b*) Nobel Cordite	III 1	2	M.S B.
(*b*) Nobel Cordite No. 2	III 1	2	M S B
(*b*) Nobel Glasgow Shotgun Powder	III 1	2	M S.B.
(*b*) Nobel Hornet Powder	III 1	2	M S B.
(*b*) Nobel Igniter Powder	III 1	2	M S B.
(*b*) Nobel Nitro-cellulose Powder	III 2	2	M S.B.
(*b*) Nobel Nitro-cellulose Powder No. 1	III 2	2	M.S.B.
(*b*) Nobel Parabellum Powder	III 1	2	M.S B.

* Only when confined is it an explosive It should be noted that the word "confined" means this substance contained in a pressure vessel and does not apply to the ordinary container used for conveyance
(*a*) These explosives are only authorised for transport when packed in a particular manner
(*b*) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(*b*) Nobel P.G Powder	III 2	2	M.S.B.
(*b*) Nobel Powder No. 52	III 1	2	M.S B.
(*b*) Nobel Revolver Neonite	III 2	2	M.S.B
(*b*) Nobel Rifle Neonite	III 2	2	M.S.B.
(*b*) Nobel Rimfire Powder	III 1	2	M.S.B.
(*b*) Nobel Rim Neonite	III 2	2	M.S.B.
Nobel Seismic Booster	VI 2	4	O.A.S.
Nobel Shaped Charge	VI 2	7	O.A.S.
(*b*) Nobel Shotgun Neonite	III 2	2	M.S B.
(*b*) Nobel Shotgun Powder	III 1	2	M S.B.
(*b*) Nobel Superim Powder	III 1	2	M.S.B.
Nobelite	II	4	M.S.B.
Nobel's Composite Explosive No 966	III 1	2	M.S.B.
† Nobel's Delay Composition R.885	V 2	10	M.S.D.
Nobel's Delay Composition R.894	II	1	M.S.A.
Nobel's Delay Composition R.998	II	1	M.S.A.
† Nobel's Delay Composition R.1006	V 2	10	M S.D.
† Nobel's Delay Composition R.1149	V 2	10	M S.D.
Nobel's Electric Delay Action Detonators	VI 3	10	M.S.D
Nobel's Electric Delay Fuzes	VI 2	6	O A.S.
Nobel's Electric Delay Action Fuzes	VI 1	6	O A.S (C)
Nobel's Electric Delay Powder Fuzes	VI 2	6	O.A S.
Nobel's Explosive No 256	IV 2	1	M S.A.
Nobel's Explosive No 536	III 1	2	M S.B.

† These explosives are only authorised for transport under a Special Packing Authority
(*b*) This explosive becomes Group I with stowage conditions M S A if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Nobel's Explosive No. 549	III 1	2	M S.B
Nobel's Explosive No 568	III 1	2	M S.B
Nobel's Explosive No 649A	III 1	2	M S.B.
Nobel's Explosive No 649B	III 1	2	M S.B
Nobel's Explosive No 673	III 1	2	M S.B.
Nobel's Explosive No 695	III 1	2	M S.B
Nobel's Explosive No 695A	III 1	2	M S.B
Nobel's Explosive No. 704	III 2	4	M S.B
Nobel's Explosive No. 704B	III 2	4	M S.B
Nobel's Explosive No 808	III 1	2	M S.B
Nobel's Explosive No 809	III 1	2	M S.B
Nobel's Explosive No 831	III 2	4	M S.B
Nobel's Explosive No 847	III 1	2	M S.B
Nobel's Explosive No. 850	III 2	4	M S.B
Nobel's Explosive No 852	III 2	4	M S.B.
Nobel's Explosive No 857	III 2	4	M S.B.
Nobel's Explosive No. 880	III 2	4	M S.B.
Nobel's Explosive No 881	III 2	4	M S.B
Nobel's Explosive No 882	III 2	4	M S.B
Nobel's Explosive No 883	III 2	4	M S.B
Nobel's Explosive No 884	III 2	4	M S.B
Nobel's Explosive No 887	III 1	2	M S.B
Nobel's Explosive No 894	III 2	4	M S.B.
Nobel's Explosive No 895	III 1	2	M.S.B
Nobel's Explosive No 896	III 2	4	M S.B
Nobel's Explosive No 898	III 1	2	M S.B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Nobel's Explosive No 901	III 1	2	M.S B.
Nobel's Explosive No 906	III 1	2	M.S.B.
Nobel's Explosive No 907	III 1	2	M S B.
Nobel's Explosive No 916	III 1	2	M S.B
Nobel's Explosive No 919	III 2	4	M S.B.
Nobel's Explosive No 920	III 2	4	M S.B.
Nobel's Explosive No. 924	III 1	2	M.S.B.
Nobel's Explosive No. 937	III 1	2	M S.B.
Nobel's Explosive No. 944	III 1	2	M.S.B.
Nobel's Explosive No 945	III 2	4	M.S.B.
Nobel's Explosive No 964	III 1	2	M S B.
Nobel's Explosive No 968	III 1	2	M S B.
Nobel's Explosive No 999	II	4	M S B.
Nobel's Explosive No 1000	III 2	4	M S B.
Nobel's Explosive No 1001	III 1	2	M S B.
Nobel's Explosive No. 1026	III 1	2	M.S B.
Nobel's Explosive No 1066	III 1	2	M S B
(*b*) Nobel's Explosive No 1091	III 1	2	M.S.B.
Nobel's Explosive No. 1105	III 1	2	M S B.
Nobel's Explosive No 1157	III 2	4	M S.B.
Nobel's Explosive No 1177	III 2	4	M.S B.
Nobel's Explosive No. 1181	III 1	2	M S.B.
(*b*) Nobel's Explosive No. 1182	III 1	2	M.S B.
Nobel's Explosive No. 1186	III 1	2	M S B.
Nobel's Explosive No 1196	III 2	4	M.S.B.
Nobel's Explosive No. 1200	III 1	2	M.S.B.
Nobel's Explosive No 1201	III 1	2	M.S B.
Nobel's Explosive No. 1213	III 1	2	M.S.B.
Nobel's Explosive No. 1220	III 1	2	M.S.B
Nobel's Explosive No 1243	II	4	M.S B
Nobel's Explosive No. 1244	III 2	4	M.S.B.
Nobel's Explosive No 1245	III 2	4	M S B.
Nobel's Flash Cartridge	VII 2	9	A S.P.
Nobel's No 48	III 2	4	M S B.
Nobel's No 49	III 2	4	M S B
Nobel's No 50	III 2	4	M S.B
Nobel's No 51	III 2	4	M.S.B.
Nobel's No 51A	III 2	4	M.S.B.
Nobel's Primers	VI 2	6	O A.S.
Nobel's Safety Electric Fuzes	VI 1	6	O.A.S (C)
(*a*) Nobel's Safety Electric Delay Fuze	VI 1	6	O.A.S.(C)
Norsabite " S "	III 2	4	M.S.B.
N.S Gelatine Dynamite	III 1	2	M.S B.
N.S Gelignite	III 1	2	M.S B.
Opencast Celmonal	III 2	4	M.S B.
Opencast Gelignite	III 1	2	M.S B.
Opencast Gelignite M	III 1	2	M S B.
Orion Patent Safety Electric Fuzes	VI 1	6	O A.S (C)
Oven Blowers	VI 2	1	M.S.A.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

(*a*) These explosives are only authorised for transport when packed in a particular manner.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Pain's Instantaneous Pyrotechnic Fuzes	VI 2	6	O A S
Palfume Azobenzene Generator	VII 2	11	O A.S (D)
Palfume D D T Generator	VII 2	11	O A S (D)
Parachute Cartridges	VII 2	9	A.S.P
Paradyn	III 1	2	M S.B.
Parafog Insecticidal Smoke Generators	VII 2	11	O.A.S (D)
Paragex	III 1	2	M S.B.
P E., P E. No 2, P.E. No 3, P.E. No 3A	III 2	4	M.S.B.
Pencol	III 1	2	M S.B.
* Penta-erythritol-tetranitrate (P E.T.N.)	III 2	4	M.S.B.
Peotregel	III 1	2	M S B.
Pentolite	III 2	4	M S.B
Percussion Boosters	VI 3	10	M S D.
† Percussion Caps O. in C. No. 1	VI 1	6	O.A.S (C)
Percussion Detonators for Boosters	VI 3	10	M S.D.
Percussion Primers	VI 3	6	O.A.S.
Photographic Flashes (1st and 2nd Definitions)	VII 2	9	A.S P.
‡ Picric Acid	III 2	4	M.S.L.
Picric Powder	III 2	1	M S L.
Picrite	III 2	4	M S B
Pilot Ejection Cartridges	VI 3	6	O.A.S.
Plaster Gelatine	III 1	2	M.S B.
Plastex No 1 " S "	III 1	2	M.S B.
Plastex (P) " S "	III 1	2	M S.B.
Plastic Core Composition	III 2	1	M S.A.
Plastic Core Safety Fuze	VI 1	6	O A.S (C)
Plastic Core Fuze for Fireworks	VI 2	6	O.A.S.
Plastic Igniter Cord	VI 2	6	O.A.S
Plastic Igniter Wick	VI 2	6	O A.S
Plastic Initiator for Smoke Generators	VI 2	6	O.A.S
Plastic 808	III 1	2	M S.B.
Plastrite	III 1	2	M.S.B.
Polar Ajax " S "	III 1	2	M S B.
Polar Ammon Gelatine Dynamite	III 1	2	M S.B.
Polar Ammon Gelignite	III 1	2	M S B.
Polar Ammon Gelignite " A "	III 1	2	M S B.
Polar Ammon Gelignite " B "	III 1	2	M S.B.
Polar Ammon Gelignite " C "	III 1	2	M.S.B
Polar Ammon Gelignite " D "	III 1	2	M.S.B.
Polar Ammon Gelignite " F "	III 1	2	M S.B.
Polar Ammon Gelignite " G "	III 1	2	M.S B.
Polar Ammon Gelignite No. 2	III 1	2	M S.B.
Polar Ammon Gelignite No. 3	III 1	2	M.S.B.
Polar A N. Gelatine Dynamite	III 1	2	M S A.
Polar A.N Gelignite	III 1	2	M.S.B.
Polar A.2 Monobel " S "	III 1	2	M S.B.
Polar A.3 Monobel " S "	III 1	2	M.S.B.
Polar Blasting Gelatine	III 1	2	M.S.B.
Polar Blasting Gelatine (P)	III 1	2	M S.B.

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* Must be wetted with not less than 25 per cent. of water calculated on the wet material.
† See notes on page 23
‡ When containing 33½ per cent. of water, calculated on the wet material, is non-explosive.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Polar Blasting Gelatine, Type 1, 92% N.O.	III 1	2	M.S.B.
Polar Blasting Gelatine, Type 2, 82% N.O.	III 1	2	M.S.B.
Polar Dynamite	III 1	2	M.S.B.
Polar Dynobel No. 2 "S"	III 1	2	M.S.B.
Polar Gelatine	III 1	2	M.S.B.
Polar Gelatine Dynamite	III 1	2	M.S.B.
Polar Gelignite	III 1	2	M.S.B.
Polar Gelignite No. 2	III 1	2	M.S.B.
Polar Geobel	III 1	2	M.S.B.
Polar Geobel No. 2	III 1	2	M.S.B.
Polar Geobel No. 3	III 1	2	M.S.B.
Polar N.S. Gelatine Dynamite	III 1	2	M.S.B.
Polar N.S. Gelignite	III 1	2	M.S.B.
Polar N.S. Gelignite No. 2	III 1	2	M.S.B.
Polar Rockite	III 1	2	M.S.B.
Polar Saxonite No. 3 "S"	III 1	2	M.S.B.
Polar Thames Powder "S"	III 1	2	M.S.B.
Polar Viking "S"	III 1	2	M.S.B.
Polar S.N. Gelatine Dynamite	III 1	2	M.S.B.
Polar S.N. Gelignite	III 1	2	M.S.B.
* Potassium Di-nitro-phenate	III 2	1	M.S.L.
Practice Electron Bombs	VI 2	11	O.A.S (D)
(*b*) Premier Powder	III 2	2	M.S.B.

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* Containing 33⅓ per cent. of water, calculated on the wet material is non-explosive.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Pressed Rocket Charges No. 1	VI 2	3	M.S.B.
Pressed Rocket Charges No. 2	VI 2	6	O.A.S.
Pressed Rocket Motors No. 1	VI 2	6 (boxed) 8 (loose)	O.A.S.
Pressed Rocket Motors No. 2	VI 2	6	O.A.S.
Primed Cambric	VI 2	6	O.A.S.
Primed Washers	VI 2	6	O.A.S.
Q.F. Ammunition	VI 3	6	O.A.S.
Quarry Antislak	III 1	2	M.S.B.
Quarry Gelammonite	III 1	2	M.S.B.
Quarry Monobel	III 1	2	M.S.B.
Quarry Plastex	III 1	2	M.S.B.
Quickmatch	VI 2	1	O.A.S.
Railway Fog Signals, O. in C. No. 1	VI 1	6	O.A.S.(C)
R.D. 1031	III 2	4	M.S.B.
R.D. Composition 202	II	1	M.S.A.
R.D.X.—B.W.X.	III 2	4	M.S.B.
R.D.X.—T.N.T.	III 2	4	M.S.B.
Reconnaissance Flares	VII 2	9	A.S.P.
16 oz. Regulation Distress Rocket	VII 2	9	A.S.P.
Relay Detonators	VI 3	10	M.S.D.
(*b*) Remington Smokeless Powder	III 2	2	M.S.B.
Rex Burrowite	III 2	4	M.S.B.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Rifle Signal Grenades	VII 2	9	A S P
Rocket Motor Charges	VII 2	6	O A.S
Rockets 3.5 in H E Anti-Tank Practice	VI 2	8	O A S (C)
Rockite	III 1	2	M.S.B
Rokitol	III 1	2	M S B.
Rokrift Powder	III 1	2	M S B
Sabulite No 1 (A)	III 2	4	M S B.
Sabulite No 1 (A) (Modified)	III 2	4	M.S.B
Safety Cartridges	VI 1	6	O A S.(C)
Safety Cartridge Cases (Empty), Capped	VI 1	6	O.A S (C)
Safety Electric Primers	VI 1	6	O.A S (C)
Safety Firing Tubes No 1	VI 1	6	O.A.S.(C)
Safety Fuze O in C. No 1	VI 1	6	O.A S (C)
Safety Instantaneous Fuze	VI 1	6	O.A S (C)
Samsonite No 3	III 1	2	M S B
Saxonite " S "	III 1	2	M.S B
(*b*) S B. Casting Powder	III 2	2	M S B
(*b*) S B C Casting Powder	III 2	2	M S B
(*a*) Schermer Cattle Killer Cartridges ..	VI 1	6	O.A.S (C)
(*b*) Schultze Gunpowder	III 2	2	M.S.B.
Seismex	III 2	4	M S B.
Seismex Primer	III 2	4	M S B
Seismic Electric Detonators	VI 3	10	M S D.

(*a*) These explosives are only authorised for transport when packed in a particular manner
(*b*) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Shaped Charges	VI 2	4	M.S B.
Sheathed Cordtex	VI 2	1	O.A S
Ship's Parachute Signal Rockets ..	VII 2	9	A.S.P.
Short Delay Detonators	VI 3	10	M S D
Signal Grenades (Naval)	VII 2	9	A.S.P.
Silver Picrate	III 2	1	M S L.
Simex	III 1	2	M.S B.
Simex No 3 " S "	III 1	2	M S B.
Slow Burning Primers	VI 3	6	O.A.S.
S.M and A. Cartridges	VI 3	6	O A S.
(*a*) Small Calibre Tracer Bullets	VI 1	6	O A.S.
Smoke Bombs	VI 3	11	O.A.S.(D)
Smoke Float Igniters	VI 3	9	A.S.P.
Smoke Generators	VI 3	11	O.A.S.(D)
Smoke Grenades	VI 3	11	O.A S.(D)
Smoke Signals	VI 3	11	O A.S.(D)
(*b*) Smokeless Diamond	III 2	2	M.S B
(*b*) Smokeless Diamond Powder No. 2 ..	III 2	2	M.S.B
(*b*) Smokeless Powder Greenbat .. .	III 2	2	M S B
S.N Gelatine Dynamite . ..	III 1	2	M S.B
S N Gelignite	III 1	2	M S B
Snaps for Bon-bon Crackers	VII 2	9	A.S.P.
Socket Distress Signals	VII 2	9	A.S.P
Socket Light Signals	VII 2	9	A.S P.

(*a*) These explosives are only authorised for transport when packed in a particular manner
(*b*) This explosive becomes Group I with stowage conditions M.S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Socket Sound Signals	VII 2	9	A.S.P.
Socket Sound and Smoke Signals ..	VII 2	9	A.S.P.
Sodium Picrate	III 2	1	M.S.L.
Sound Signal Rockets	VII 2	9	A.S.P.
Special Gelatine	III 1	2	M.S.B.
Special Gelatine (A)	III 1	2	M.S.B.
Special Gelatine, 90 per cent. Strength	III 1	2	M.S.B.
Special Gelignite 62 per cent.	III 1	2	M.S.B.
Special Opencast Gelignite	III 1	2	M.S.B.
Special Safety Fuze	VI 1	6	O.A.S.(C)
(*b*) Sporting Ballistite	III 1	2	M.S.B.
S.R.C. 2	II	1	M.S.A.
Star Shells	VII 2	9	A.S.P.
Steam Generators	VII 2	9	A.S.P.
Stonobel "S"	III 1	2	M.S.B.
Stooks	VI 2	7	O.A.S.
Sub-calibre Cordite Cartridges ..	VI 3	11	O.A.S.(D)
Sub-calibre Smoke Bomb Cartridges ..	VI 3	6	O.A.S.
Submarine Blasting Gelatine	III 1	2	M.S.B.
Sunderite	III 2	4	M.S.B.
Super-Abelite	III 2	4	M.S.B.
Super Ajax	III 1	2	M.S.B.
Super Ammodyne	III 1	2	M.S.B.
Swiftram Powder	II	1	M.S.A.
Tetra-nitro-aniline	III 2	1	M.S.A.
Tetra-nitro-methyl-aniline (Tetryl) ..	III 2	1	M.S.A.
* Tetrazene	V 2	10	M.S.D.
Thameite No. 1	III 2	4	M.S.B.
Thameite Grain No. 1	III 2	4	M.S.B.
Thameite No. 2	III 2	4	M.S.B.
Thameite Grain No. 2	III 2	4	M.S.B.
Thameite No. 3	III 2	4	M.S.B.
Thameite Grain No. 3	III 2	4	M.S.B.
Thameite No. 4	III 2	4	M.S.B.
Thameite Grain No. 4	III 2	4	M.S.B.
Thameite No. 5	III 2	4	M.S.B.
Thameite Grain No. 5	III 2	4	M.S.B.
Thameite No. 6	III 2	4	M.S.B.
Thameite Grain No. 6	III 2	4	M.S.B.
Thermite Igniters	VII 2	9	A.S.P.
Throwdowns	VII 2	9	A.S.P.
16 oz. Thunderflash Rockets	VII 2	9	A.S.P.
Thunderflashes, Large (Naval)	VII 2	9	A.S.P.
Tolumite No. 1	III 2	4	M.S.B.
(*b*) Tonite or Cotton Powder No. 1	III 2	2	M.S.B.
(*b*) Tonite or Cotton Powder No. 2	III 2	2	M.S.B.
(*b*) Tonite No. 3	III 2	2	M.S.B.
Torpex	III 2	4	M.S.B.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

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* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No. 798 (1949).

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(a) Toy Balloons	VII 2	9	A S.P.
Tracer and Igniter Shell No. 10	VII 2	9	A.S.P.
Tracer Bullets	VII 2	9	A.S.P.
Tracers (1st, 2nd, 3rd and 4th Definitions)	VII 2	9	A.S.P.
Tracer Shells	VII 2	9	A S.P.
Trinite No. 1	III 2	4	M.S.B.
Trinite " W "	III 2	4	M S B
† Tri-nitro-resorcinol (Styphnic acid)	III 2	1	M S L
Tri-nitro-toluene ("T.N T.")	III 2	4	M S B
Trip Fuzes	VI 1	6	O.A S (C)
Tubes for Firing Explosives	VI 2 & 3	6	O.A.S.
Tubes, Tracers for Q.F. Ammunition	VI 1	9	A.S.P.
Turbo-Starter Primers, Electrically Fired, 15 grain	VI 1	6	O.A.S.(C)
Unibel	III 1	2	M S B
Unifrax	III 1	2	M.S.B.
Unigel	III 1	2	M.S B
Unigex	III 1	2	M.S.B.
Unigex H	III 1	2	M.S.B.
Unikol	III 1	2	M.S B
Unirend	III 2	4	M S B.
Venus or Vulcan Patent Safety Electric Fuzes	VI 1	6	O.A.S (C)
Very Signal Cartridges	VII 2	9	A.S.P.
(a) Vickers' Percussion Caps	VI 1	6	O.A.S (C)
Victor Powder	III 1	2	M S.B
Victor Powder M	III 1	2	M.S.B.
Viscorm	III 1	2	M S A.
Vistex Nos 1, 2, 3 and 4	III 2	4	M S B
Vulcan Patent Electric Delay Action Fuzes	VI 1	6	O.A.S.(C)
Wet Guncotton (see Guncotton)	III 2	4	M S B
Wind Direction Smoke Bombs	VI 3	11	O.A.S (D)
Winrox	III 1	2	M S.B.
XL-Hawkite " S "	III 2	4	M S.B

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† Must be wetted with not less than 20 per cent. of water, calculated on the wet material

(a) These explosives are only authorised for transport when packed in a particular manner

(a) These explosives are only authorised for transport when packed in a particular manner.

SPECIFICATION FOR THE CONSTRUCTION OF MAGAZINES

1. The following rules are to be observed in the construction of magazines required by Sub-sections A to C of this Section and supersede all previous rules

2. *Position.*—Magazines may be fitted in any part of the ship conforming with the conditions laid down in paragraphs 17 to 22 and paragraphs 25 of Sub-section A, but they must be so placed that their doors are easily accessible from a hatchway.

3. *Materials*—Except where otherwise specified in these rules, magazines are to be constructed of wood, using clean undressed timber Timber sizes given below are for general guidance only and the use of other sizes, depending on material available, is not precluded. For instance the use of 4-inch by 2-inch uprights in lieu of 3-inch by 3-inch and of 1-inch boards in lieu of 1½-inch is at present authorised by the Ministry of Transport and Civil Aviation Nails used for fastening timber are to be of galvanised iron or non-ferrous material.

4. *Magazine Type A.*—This type of magazine is required for stowage of explosives denoted by the letters M.S.A or M S L in Sub-sections B and C.

5 The magazine is to be a space of the required size, normally in 'tween deck or shelter deck, enclosed by partitions constructed of 1½-inch close fitting boards secured internally to 3-inch by 3-inch uprights spaced 2 feet apart running from deck to deck and firmly secured top and bottom. When the height of the deck exceeds 8 feet uprights should be spaced not more than 18 inches apart. When built on steel or iron decks the heels of the uprights are to be stepped on and secured to a board 1 inch thick laid on the deck

6 The boarding of these partitions is to run from upright to upright on the inside of the magazine extending from deck to deck and fitting closely between the beams and to be fastened securely by 3-inch nails, three to each board on each upright.

7 Boards 9-inch by 1½-inch to be securely fastened to the outside of the uprights at the upper and lower ends for securing heads of shores when required The space formed between the lower board and the partition boards is to be filled in.

8 The ship's sides and/or hold bulkheads may, if necessary, be used as the sides of the magazine, but in this case the ship's side and steel bulkhead must be close lined with 1½-inch boards up to the beams

9. The flooring of magazines of this category is to consist of close fitting 1½-inch board secured over 3-inch by 2-inch bearers spaced 18 inches apart.

10 All pillars, stanchions, ventilator shafts and all other iron work in the magazines are to be close sheathed with wood or other suitable material.

11. Where required for the stowage of explosives requiring lead free conditions (denoted by the letters M S L. in Sub-sections B and C) the deckhead over the magazine must be lined with close fitting 1-inch boarding secured under the beams When the latter is not practicable, the packages will be covered by a "lead-free" fabric sheet, e.g a closely woven linen or cotton sheet. In other cases the deckhead need not be lined but care is to be taken that the beams and underside of deck are well painted and are free from rust, scale and loose paint.

12. One or more doorways according to the size of the magazine, at least 4 feet wide, are to be fitted in the side of the magazine facing the hatchway with a 3-inch by 3-inch cant piece fitted and secured, at the lower part to form a sill for the full width of the doorway, the top edge being 1 inch above the bottom boards. The framing of the doorway should leave a 1½-inch rabbet on the inside of the magazine, formed by the uprights and the lining. An additional thickness of 2 inches is to be secured to the uprights on each side of the doorway to a height of 2 feet 6 inches for the lower part of the door to run on ; these additional pieces to be snapped off from front to back for a distance of 6 inches down from the top.

13. The door may be made in one or two parts If of two parts, the door is to be formed of two thicknesses of 1½-inch boards, the lower part to be 3 feet in height and to be shipped from the inside, the upper part to be of such height as is necessary and to be shipped from the outside. The boards forming the upper part of the door are to be well fastened together crossway by nails, having their points turned on the inside and punched in, the inner boards to fit the width of the doorway and to extend 5 inches beyond the upper edge of the outer boards and 2 inches beyond the lower edge. Both ends of the outer boards are to extend 3 inches beyond the sides of the inner boards forming reverse rabbets.

14. The boards forming the lower part are to be secured to and kept 3 inches apart by fir scantling 3 inches by 3 inches extending from 1 inch above the bottom to within 2 inches of the top and placed 2½ inches in from each end of the outer boards, the length of the outer boards to be of the width of the doorway and the inner boards to extend 1½ inches beyond the outer boards at each end.

15 Two band-holes for lifting purposes are to be cut through both the inner boards of the lower part and the outer boards of the upper part. When both parts of the door are in place the space between the top of the upper part and the lower edge of the shoring board is to be filled in with a 1½-inch board securely fastened to the uprights.

16 A 3-inch by 3-inch stanchion is to be securely wedged between deck at the middle of the door and tommed off to prevent shifting. The section of this stanchion should be increased as necessary if heavy packages are stowed in the magazine

17. If a one-piece door is fitted it is to be of similar construction and fitting to the upper door section referred to above. Where insulated spaces are used as magazines the hinged insulated doors should be utilised.

18. *Magazine Type B.*—This type of magazine is required for the stowage of explosives denoted by the letters M S.B. in Sub-sections B and C.

19 The magazine is to be similar in construction to Magazine Type A, except that where the sides of the magazine consist of the ship's sides and/or hold bulkheads these should be lined with cargo battens not more than 6 inches apart. Where cargo battens are already fitted and are more than 6 inches apart filling pieces are to be provided. Where no cargo battens are fitted temporary battens 6 inches by 2 inches spaced 12 inches apart, centre to centre, should be provided.

20. The flooring of this category of magazines where not built on cargo is to consist of sparred gratings constructed of 3-inch by 1-inch spars spaced 3 inches apart nailed to 3-inch by 1-inch cross spars of bearers spaced 12 inches apart. These gratings are to be portable to allow access for cleaning and in sections of a size suitable for passing through the doorway

21. *Fixed Magazines on Cargo*—When it is necessary to build a magazine on cargo, the selected place is to be levelled and the floor formed of 3-inch by 3-inch quartering placed 2 feet apart and covered with close fitted 1½-inch boards securely nailed. Uprights 3 inches square, 2 feet apart, are to be run from the boards to the deck above, to fit tight and be well driven in, cleated at the bottom and well tommed off at the top.

22. The remainder of the magazine is to be constructed as specified above for a magazine Type A or B except that in the case of the latter the ship's sides and/or hold bulkheads must be close lined with 1½-inch boards up to at least 3 feet above the level of the floor, the ship's sides, etc., above this being sparred.

23. *M.S.D. Magazine.*—This may be either a fixed magazine or a portable magazine as described in the succeeding section, and is required for the stowage of explosives denoted by the letters M.S.D. in Sub-sections B and C.

24. A fixed magazine of this category is to be constructed in a similar manner to that prescribed above for Magazine Type B, except that it must be placed at least 8 feet from the ship's side.

25. *Portable Magazine.*—This may be used in lieu of a fixed magazine for explosives denoted by the letters M.S.A., M.S.B., M.S.D. or M.S.L. in Sub-sections B and C, but the capacity must not exceed 2 tons measurement.

26. A portable magazine is to be made to the size required in accordance with the dimensions of the packages to be stowed therein and consists of a frame, made of 3-inch by 2-inch quartering floored and boarded up on the inside with 1½-inch boarding with a similar top and lid fitted with cleats on the inside to keep it in its place when shipped.

27. Portable magazines when stowed must be securely chocked off and if containing detonators must be stowed at least 8 feet from the ship's side

28. *Locking*—Magazines of all types are to be secured by strong padlocks of the Yale type, with hasps and staples of metal or galvanised iron.

In the case of portable magazines efficient locking is to be effected by a locking plank placed across the movable portion of the lid and secured by padlocks of the Yale type to staples in the fixed portions of the magazines, these staples being clinched over on the inside to ensure that they cannot be prized off

29. *Ventilation.*—Fixed magazines are to be efficiently ventilated, but any deck ventilator leading into the magazine is to have double fine mesh wire gauze guards fitted in the ventilator coaming, or otherwise be fitted with a fireproof cowl or other efficient fireproof covering.

Compartments in which a portable magazine is stowed are also to be efficiently ventilated and ventilators protected as above.

30. *Shoring and Securing*—Magazines, when not blocked off at the sides by other cargo, are to be efficiently tommed off. When a magazine measures athwartships more than 40 feet, a fore and aft bulkhead must be fitted on the centre line to facilitate blocking off packages in the magazine. This bulkhead is to be constructed of 3-inch by 3-inch uprights 3 feet apart extending from deck to deck, secured top and bottom as for side partitions and lined up with 1-inch boarding not more than 6 inches apart placed alternately on either side of the uprights. The ship's permanent stanchions may be used in lieu of temporary uprights when they are suitably placed and not more than 6 feet apart.

31. *Steel or Iron Magazines*—When necessary to fit a permanent cargo magazine in a ship, this may be constructed of iron or steel but in this case the whole of the interior is to be thoroughly protected by paint, varnish, galvanising or other suitable coating and also close or sparred lined with wood as described above according to the nature of the explosives to be stowed.

32. *Stowage of medium and small quantities of S.A.S. Explosives*—When the quantity of S.A.S. explosives to be stowed exceeds 35 tons but is insufficient to justify the use of a deep tank or No. 1 lower hold, a special magazine of the type described in paragraphs 33 to 38 will be constructed in a 'tween deck space to accommodate the consignment and prevent the escape of leakage from the packages

33. A 'tween deck space forward should be selected and, for preference, the smallest and furthest from accommodation, bunker, stokehold or engine room spaces. The site of the magazine should be at least 8 feet from the ship's side and be such as to exclude ventilators, vent shafts, electric cables, trimming hatches and scupper pipes, from the enclosure. A wood deck should not be used nor, if it can be avoided, a wood sheathed deck.

34. The magazine is to be an enclosure of the required size constructed of 3-inch by 3-inch uprights spaced 2 feet apart running from deck to deck and lined internally with two thicknesses of ½-inch boarding with a layer of unbleached calico worked between. The ½-inch boarding is to be worked horizontally, close fitting and with the edges breaking joint as shown in Plate I. The deckhead is to be similarly lined, the boarding being fitted on the underside of the beams.

35. The uprights are to be stepped on 1-inch planking well bedded in glazier's putty and firmly secured top and bottom, 1½-inch by 1½-inch boards being securely fastened on the outside at the upper and lower ends for securing heads of shores when required. A cement fillet at least 6 inches in height is to be worked round the whole of the inside of the magazine where the sides take on the deck. The cement should if possible be treated with sodium silicate (water-glass) when partly dry or alternatively a waterproof type of cement may be used.

36. A doorway 4 feet wide and 5 feet high is to be fitted in the side of the magazine facing the hatchway, the bottom of the doorway being at least 1 foot above the level of the deck. The door is to be hinged, opening outwards and constructed of a substantial framework with lining similar to that used for the walls of the magazine. The edges of the door and doorway frame are to be made so as to form a plug joint and should be lined with good quality felt. Securing arrangements are to consist of three butterfly nuts fitted to the doorway frame to take on appropriate fittings on the top, bottom and side of the door (see details in Plate I).

37. The 'tween deck space must be sealed off in accordance with paragraph 25 (*h*) of Sub-section A.

38. When Group 13 explosives charged with G.1 or G.10 are stowed in such magazines a 3-inch ventilating pipe is to be let into the deckhead, through the lining and into the magazine. It must extend through the upper deck to a point at least 15 feet above upper deck level, well clear of the bridge and living quarters

39 When the quantity of S A S explosives *does not exceed* 35 *tons* approximately, special containers of the following types may be used as specified in paragraph 25 (*i*) of Sub-section A. They may be of the Portable Type A or Portable Type B

40. The Portable Type A is illustrated in Plate IIA and should be constructed mainly of 4-feet by 4-feet light pressed steel units, suitable for assembly *in situ.* The units are to be not less than $\frac{3}{16}$th-inch thick, with continuous flanges for external bolting The lid is to consist of two 4-feet by 2-feet end units with centre 4-feet by 4-feet units as required These units to be of $\frac{3}{16}$th-inch flat steel plate, suitably stiffened. The end units must be bolted in position before loading to prevent distortion The centre units to be well bolted down along the sides and joints after loading

41 The containers may be assembled 8, 12 or 16 feet long, according to the quantity of explosives to be stowed, and are to be gas tight A suitable plastic jointing compound approved by the Ministry of Transport and Civil Aviation will be used throughout to effect a seal. The interior is to be painted with an anti-corrosive paint complying with the Lead Poisons Act, 1926, as regards freedom from lead.

42. The 2-feet end units of the lid are to be fitted with a 2-inch socket and a plug, the socket being suitable to take a pressure test apparatus or a ventilating pipe. Each end unit of the body is to be fitted with a 1-inch drain plug, low down, about the centre.

43. The container is to be tested to an air pressure of 2 lb. per square inch before stowing the explosives and no leakage should occur.

44 When very small quantities of S.A.S. explosives are to be stowed a portable container, as illustrated in Plate IIB, may be used.

45. The Portable Container Type B should be approximately 5 feet by 2 feet 9 inches by 2 feet. It is to be constructed of plate not less than $\frac{3}{16}$th-inch thick. The bottom and ends are to be in one piece, with the edges suitably mitred for welding and flanged to form an efficient lap for securing the sides. If riveting is used, the rivets should be at water-tight spacing.

46 A continuous boundary bar of 2-inch angle is to be fitted on the outside 1 inch below the top and efficiently secured to the container Four 2-inch angle bar stiffeners are to be fitted round the container as shown, one at each end, the others equally spaced as shown These stiffeners are to be properly secured in position and welded at their upper ends to the boundary bar, the upper standing flanges being snaped off.

47. The lid is to be of $\frac{1}{4}$-inch plate and is to extend for $1\frac{1}{2}$ inches beyond the sides of the container A $1\frac{1}{2}$-inch rubber strip $\frac{1}{4}$-inch thick or similar jointing material is to be secured to the underside of the lid by $\frac{1}{4}$-inch steel strips to engage the upper edge of the body and form a gas tight joint. The lid is to be provided with suitable hinges and secured by 20 butterfly nuts and fittings, i.e. six down each side and four at each end.

48 A 2-inch socket, with plug, suitable for a pressure test apparatus or ventilating pipe is to be provided in the lid, and a drain plug, 1-inch diameter, at the bottom of the container, as shown At least four lifting points, with suitable shackles, are to be fitted in the standing flanges of the stiffeners.

49 The interior of the container is to be painted with an anti-corrosive paint complying with the Lead Poisons Act, 1926, as regards freedom from lead.

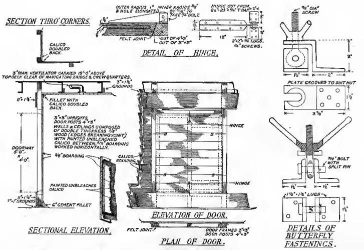
50 Before stowing the explosives, the container is to be tested for air tightness to a pressure of 2 lb per square inch and no leakage should occur.

51. *Magazine Specification*—Alternative arrangements to those set out in paragraphs 32 to 50 may be adopted provided they are approved by the Ministry of Transport and Civil Aviation as being equally effective. An approved asbestos lined type magazine or a sand bag enclosure may be used for S A.S explosives in Group 12 instead of the special calico interlined type.

PLATE I

SPECIAL MAGAZINE FOR S.A.S. EXPLOSIVES

STOWAGE IN TWEEN DECKS.


CALICO DOUBLED BACK.
OUTER RADIUS 1" INNER RADIUS 3/8" & HOLE ELONGATED BY 5/16" TO TAKE 3/4" BOLT.
FELT JOINT
OUT OF 4"×3"
OUT OF 3"×2"
HINGE CUT FROM 2½"×2½"×5/16" T BAR
2"
3"
3"
12"
2"×2"×5/16" LUGS. 1/4" SCREWS.
3" DIAM. VENTILATOR CARRIED 15'-0" ABOVE TOPDECK CLEAR OF NAVIGATING BRIDGE & CREW QUARTERS.
3"×1½" GROUNDS
11"×1½"
FILLET WITH CALICO DOUBLED BACK.
3"×3" UPRIGHTS, DOOR POSTS 4"×3" WALLS & CEILINGS COMPOSED OF DOUBLE THICKNESS 5/8" WOOD (EDGES BREAKING JOINT) WITH PAINTED UNBLEACHED CALICO BETWEEN 5/8" BOARDING WORKED HORIZONTALLY.
DOORWAY 5'0" × 4'0"
5/8" BOARDING
PAINTED UNBLEACHED CALICO
11"×1¼"
7"×1" GROUNDS
6" CEMENT FILLET
CALICO BOARDING
HINGE
HINGE
FELT JOINT
DOOR FRAMES 3"×3" DOOR POSTS 4"×3"
7/8" DIAR SCREW
2"
1½"
2"
PLATE GROOVED TO SUIT NUT
1½"
3 5/8"
7/16" BOLT WITH SPLIT PIN
1½"
1½"
1½"×1½" LUGS
1½"

SECTION THRO' CORNERS.

DETAIL OF HINGE.

SECTIONAL ELEVATION.

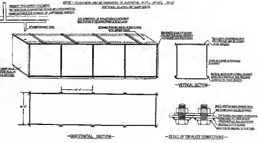
ELEVATION OF DOOR.

PLAN OF DOOR.

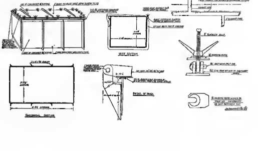
DETAILS OF BUTTERFLY FASTENINGS.

PORTABLE CONTAINERS FOR S.A.S. EXPLOSIVES

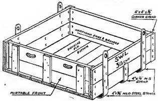
TYPE A


NOTE:- CONTAINERS CAN BE FABRICATED IN SLENGTHS,
—VERTICAL SECTION—
—HORIZONTAL SECTION—
—DETAIL OF TOP PLATE CONNECTIONS—
BOLT HEADS WELDED TO FLAT BAR.

TYPE B



AMMUNITION TRAY



A SPECIAL DEEP SIDED IRON BOUND TRAY DESIGNED TO LIFT 30 CWTS. FOR S.A.A & SHELLS ETC. ITS INTERNAL DIMENSIONS ARE 4'x4'x12". ONE SIDE BOARD OF TRAY IS PORTABLE & FITTED INTO CHANNEL BARS. THE TRAY IS LIFTED BY MEANS OF THE W.O. TYPE FOUR LEGGED SLING WHICH HOOKS ON TO THE MILD STEEL STRAPS. THE SLIDING SIDE IS FOR LOADING AND UNLOADING AND MUST BE IN PLACE WHEN SLUNG LOADED SIMILARLY WHEN TRAY IS NOT IN USE

NOTES:

1. RELAXATIONS MAY BE PERMITTED REGARDING THE WOODS TO BE USED FOR THE TRAY
2. THE FLOOR OF THE TRAY SHOULD NOT EXCEED 5 FEET SQUARE.
3. THE HEIGHT OF THE SILL SHOULD NOT BE LESS THAN 12 INCHES.

PLATE IV. BOMB SLINGS AND HOOK FOR 250, 500 AND 1000 LB. BOMBS.

Not to scale

FIGURE 1

WIRE ROPE SLING

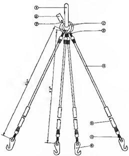


FIGURE 2

CHAIN SLING

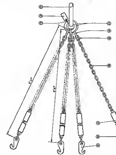
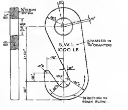


FIGURE 3

HOOK.

STEEL (28 TON), CADMIUM PLATE FINISH.



NOTE:- ALL SHARP EDGES TO BE REMOVED (·03" RAD). HOOK TO BE PROOF LOADED TO 2000 LB

WIRE ROPE SLING – DETAILS

1. MAIN RING – 3" I/D, 15/16" SECTION TO B.S. 1290.
2. INTERMEDIATE RINGS (2) TO B.S. 1290 – 2½" I/D, ⅝" SECTION.
3. THIMBLE (8) TO B.S. 464 TO SUIT ITEM 4 SERVED.
4. WIRE ROPE TO B.S. 302, BEST PLOUGH STEEL, GALVANISED 1" CIRC. 100/110 TONS ALL 6x19 CONSTRUCTION BREAKING LOAD 2·4 TONS. THE LENGTHS SHOWN ARE MINIMA, BUT THE DIFFERENCE OF 6" BETWEEN INNER AND OUTER LEGS IS TO BE MAINTAINED.
5. SHEATHING OF LEATHER HYDRAULIC (4) 1'6" LONG x ⅛" THICK, SECURELY STITCHED.
6. HOOK – SEE FIGURE 3
7. WIRE (LENGTH AS REQUIRED). 18 SWG. (·048" DIA.) SOFT IRON WIRE
8. TALLY – 16 SWG. (·064") BRASS, 4"x2" COMPLETED AS SHOWN IN FIGURE 4

NOTE:- SLINGS TO CONFORM TO A.P. 2/SRD/302/P
AT MANUFACTURE EACH LEG TO BE PROOF LOADED TO 2000 LB.
COMPLETE SLING TO BE PROOF LOADED TO 6000 LB.
VERTICAL SAFE WORKING LOAD OF EACH LEG TO BE 1000 LB

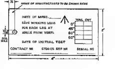
CHAIN SLING (DRAWING SM/C/3488) – DETAILS

1. MAIN RING – as for wire rope sling.
2. INTERMEDIATE RINGS (2) – as for wire rope sling.
3. SERVABLE END LINKS (4) – ⅞" MILD STEEL IN ACCORDANCE WITH B.S. 590 (DRAWING SM/A/2508)
4. CHAIN (LENGTHS AS REQD EXT.) – No. 8 SWG. (·270") IN ACCORDANCE WITH B.S. 590 (see details of wire rope sling, item 4)
5. LEATHER SHEATH (as for wire rope sling)
6. HOOK – SEE FIGURE 3
7. WIRE (as for wire rope sling)
8. TALLY (as for wire rope sling)
9. INTERMEDIATE LINKS (8) – No. 2 SWG. (·276" DIA.) MILD STEEL IN ACCORDANCE WITH B.S. 590 (DRAWING SM/A/2509)

NOTE:- The drawings referred to here are produced by the Directorate of Servicing Research and Development, Ministry of Supply.

FIGURE 4.

TALLY.



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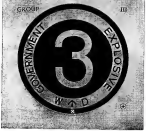
LABELLING OF GOVERNMENT EXPLOSIVES



*W.D for War Department Explosives	..	Army Explosive
R.A.F for Air Ministry Explosives	..	Air Force Explosive
N for Admiralty Explosives	..	Naval Explosive
M.O S for Ministry of Supply Explosives		Ministry of Supply Explosive

+Printed in Red on a White background as shown, but older labels may have a background coloured as follows —

Blue for Army Explosive.
Brown for Air Force Explosive
White for Naval Explosive.

Note (1)—Certain Naval packages carry a label on which a double classification figure appears thus $\frac{6}{9}$ The numerator denotes the explosives group as shown in Sub-section B, the denominator indicates a special classification on board H.M. ships

Note (2)—Packages may have the above symbol stencilled or branded at the discretion of the Service Department concerned.

SUB-SECTION F

MARKING OF GROUPS 11, 12 AND 13 EXPLOSIVES

1. All smoke explosives in Group 11 are painted Light Green.

Those charged Titanium tetrachloride are marked F M. or with one white and one red ring

Those charged Chlorosulphonic acid mixture are marked C.S A.M. or with one white and one yellow ring

2. All smoke explosives in Group 12 are painted Light Green

With the exception of the Cartridges S A., those containing phosphorus may have the letters "PHOS" in black or alternatively a white band.

3 All explosives belonging to Group 13 are painted Light Grey with the addition of Coloured Rings.

4. When explosives in Groups 11, 12 or 13 are in packages the above markings and colour scheme is applied to the packages

RESTRICTIONS ON STOWAGE OF CERTAIN MATERIALS IN SHIPS CARRYING EXPLOSIVES

Certain materials will be subject to restrictions in stowage as given below — This restriction is indicated by the number in the appropriate column of the tables When explosives are stowed on deck their position in relation to dangerous goods will be governed by restrictions 2 or 3 where these are applicable. Dangerous goods normally subject to restriction 4 will, when explosives are stowed on deck, be regarded as subject to restriction 3.

1. May not be carried in an explosives ship.

2. Must, whether stowed on or under deck, be separated from any explosives by the engine and boiler rooms space. If carried in a shelter deck space there must, in addition, be an efficient fire stop (see Note in para 4 below) between the place where the goods are carried and the hold or holds containing the explosives.

3. Must, if stowed under deck or in a sheltered deck space, be separated from the explosives by the engine and boiler rooms space or by one complete hold in a horizontal plane and if in a shelter deck space, there must in addition be an efficient fire stop (see Note in para. 4 below) between the place in which the goods are carried and the hold in which the explosives are stowed. If carried on the open deck they must not be directly above the hold in which the explosives are stowed, and if the explosives are in the compartment immediately below the deck, the goods must be separated from them by a distance of at least one compartment.

4. May not be stowed in the same hold with any explosives and, if on deck, may not be directly above explosives stowed in the compartment immediately below the deck. If carried in a shelter deck space there must in addition be an efficient fire stop between the dangerous goods and the hold in which the explosives are stowed.

> *Note.*—By an efficient fire stop is meant a complete steel bulkhead or one in which the openings are effectively closed by a stout steel plate or plates secured to the bulkhead.

5. May be stowed in the same hold, but not in the same compartment, with explosives of Groups 5 and 7, and with the following explosives in Groups 6 and 8 :—

Group 6.
- Safety class ammunition.
- Fuzes.
- Fuze, instantaneous.
- Gaines.
- Heads, rocket, radar-echo.
- Igniters (all natures).
- Primers, percussion.

Group 8.
- Grenades, H.E.
- Petards
- Projector ammunition, practice.

Group 6 (contd.).
- Primers, electric
- Primers, electric and percussion.
- Projectiles, hedgehog, weighted.
- Projectiles, practice, hedgerow
- Shell, boxed (all natures)
- Shot, with tracer
- Tubes (all natures).

They may not be stowed in the same hold with any other explosives unless the explosives are packed in portable containers, Type A or B and are stowed in a separate compartment. This rule also applies to those commercial explosives shown in Sub-section C having the same designation or the same equivalent Government Explosives Group

6. May be stowed in the same hold with any explosives but in a separate compartment.

7. May be stowed in the same hold with any explosives but not in the same compartment with explosives other than those of Groups 5 and 7, those of Groups 6 and 8 listed in restriction 5, and any contained in portable container Type A or B. They may not overstow any explosives other than shell, plugged (Group 5) and bombs, aircraft (Group 7). This rule also applies to those commercial explosives shown in Sub-section C having the same designation or the same equivalent Government Explosives Group

The following goods, which are not dangerous, require a degree of segregation from explosives The necessary restrictions are given in the table below :—

Material	*Restriction*
Ammonium salts, other than those included in the schedules	6
Guano	5
Lime, slaked	6
Perborates	7
Percarbonates	7
Persulphates	6
Sulphides, other than those included in the schedules	5

> *Note*—When the proximity of Safety Class Ammunition only has to be considered restriction 4 (5 in the case of Safety Cartridges only) may be regarded as taking the place of restrictions 2 and 3 and restriction 6 as taking the place of restriction 4

(Category (ii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Compressed Gases

SUB-SECTION A

1. This Section deals with compressed gases under the following headings :—

(1) Permanent Gases—gases which remain gaseous except at very low temperatures

(2) Liquefied Gases—gases which remain liquid under pressure at normal temperatures.

(3) Dissolved Gases—gases dissolved in a solvent and absorbed in a porous material.

2. These gases are usually carried in steel cylinders, but certain of them may be carried in large welded containers, or in special containers or tanks which have been or may be approved by the Ministry of Transport and Civil Aviation The types of container which may ordinarily be used for particular gases are stated in Sub-section B of this Section.

3. The hazards involved in the carriage of compressed gases are :—

(1) The physical damage to the surroundings which may result from the bursting of a container.

(2) The danger arising from the nature of the gas should it escape A gas may possess any or a combination of these dangerous properties ; it may be inflammable and form explosive mixtures with air ; it may be poisonous ; it may corrode metals ; or it may cause self ignition of certain substances.

(3) Some gases have no deleterious properties themselves but if present in excess will cause suffocation by reducing the proportion of oxygen in the air.

Gases vary in density compared with air. Some are heavier than air and tend to remain at the bottom of the compartment while others are lighter than air and will rise and diffuse more readily.

General Requirements

4. The following conditions apply, except where specially indicated, to all gases contained in steel cylinders, or large welded containers :—

(1) The cylinders or containers and their valves shall comply with one of the appropriate specifications or otherwise be approved by the Ministry of Transport and Civil Aviation. Reference to the appropriate specification is made against the name of the gas in Sub-section B of this Section.

(2) This requirement is relaxed for certain foreign cylinders loaded at a foreign port. In such cases, the carriage of cylinders is permitted if the cylinders are constructed, maintained and filled in accordance with an appropriate specification approved by the Government concerned.

(3) The valves of cylinders or containers shall be protected against damage either by the design of the cylinder or container or by the provision of a stout metal cap or metal cover securely attached to the body of the cylinder or container The metal cap or cover shall be so made that it is nowhere in actual contact with any part of the valve or valve body. Every metal cap or cover, except in the case of cylinders for hydrocyanic acid, shall be provided with a vent of such size as to prevent gas pressure inside the cap or cover. Small cylinders packed in stout cases which will adequately protect the valves need not be provided with caps or covers.

(4) The outlet of valves of cylinders or containers for inflammable gases shall be provided with left-handed screw threads for the pipe or other connections

(5) Oil or similar lubricant shall not be used on any valves or other fittings of any cylinders or containers except in the case of acetylene.

(6) Each cylinder or large welded container shall be submitted to the hydraulic tests specified in the appropriate specification at intervals not greater than two years, provided that :—

(i) in the case of cylinders manufactured to approved specifications and which are not more than 25 years old, the periodic hydraulic stretch test may be extended to intervals not greater than four years, and

(ii) in the case of large welded containers which are not more than 25 years old the periodic hydraulic tests may be extended to intervals not greater than three years.

Prior to any hydraulic test the cylinder or container shall be thoroughly cleaned and examined externally and, so far as practicable, internally for surface defects, corrosion and foreign matter. In the case of cylinders where internal rust or foreign matter is observed, the cylinder, prior to hydraulic test, shall be heated to a temperature not exceeding 300° C. (572° F.) and again cleaned and examined. Large welded containers should not normally require to be re-heat treated during service, but if in any particular case re-heat treatment is considered desirable, that specified in the appropriate specification should be given After each hydraulic test and before being taken into use the cylinder or container shall be thoroughly dried internally and shall be stamped with marks and figures indicating the person or firm and the date of test as indicated in the appropriate specification

(7) Cylinders or large welded containers shall be legibly marked or labelled with the name of the gas and the name and address of the person or firm by whom it was compressed. Cases in which cylinders are packed shall be legibly marked or labelled as above in red except where cases are coloured red all over when the marking or labelling may be of any suitable colour.

(8) (i) The pressure in the cylinder at 45° C. (113° F.) (temperate climates) or at 65° C. (149° F.) (tropical climates) must not exceed three-quarters of the hydraulic test pressure to which the cylinder is submitted.

(ii) The liquid portion of the gas, if any, must not occupy more than 95 per cent. of the capacity of the cylinder at 45° C. (113° F.) (temperate climates) or 65° C. (149° F.) (tropical climates).

Permanent Gases

5. For permanent gases, in addition to the conditions laid down in paragraph 4 above, the following additional conditions are prescribed :—

(1) The working or internal pressure in any cylinder shall not exceed that shown for each gas in Sub-section B (1) of this Section, measured at 15·5° C. (60° F.).

(2) The recommendations contained in paragraph 4 and paragraph 5 (1) above do not apply to special light alloy steel cylinders containing permanent gases. Such cylinders, of capacity not greater than 20 cubic feet of free gas, may be required in particular cases where it is highly important to have very light small cylinders. They must always be packed in stout cases and their acceptance for conveyance will be subject to the permission of the Ministry of Transport and Civil Aviation, and to conditions which are laid down in the letter of approval.

Liquefied Gases

6. For liquefied gases, in addition to the conditions laid down in paragraph 4 above, the following additional conditions are prescribed :—

(1) Each cylinder or container shall be completely emptied and thoroughly dried on each occasion before being charged.

(2) Care must be taken that the gas is freed from moisture.

(3) The appropriate filling ratio (i.e. the weight of gas in pounds permitted for each pound of water capacity of the cylinder or container) set out in Sub-section B of this Section for each gas, and for the nature of the voyage to be undertaken, must be observed. The accuracy of each charge shall be determined by weighing.

(4) A notice shall be attached to each cylinder and/or case, and each large welded container, to indicate that it should be kept as cool as possible.

(5) The recommendations contained in paragraph 4 and in sub-paragraphs 6 (1), (2), (3) and (4) do not apply to the special containers for certain liquefied gases such as glass syphons for sulphur dioxide, "sparklets" for carbon dioxide, etc., conditions concerning which are given under the name of the gas in Sub-section B of this Section.

(6) The assumed working pressures at 45° C. and 65° C. listed in columns 6 and 8 of Sub-section B of this Section are those reported for pure gases and will need to be increased if more volatile impurities are liable to be present. They have been included as a guide for the design of containers for low pressure liquefiable gases. In the high pressure liquefiable gases, viz., carbon dioxide, nitrous oxide and chlorotrifluouromethane the values apply only to the specified filling-ratios and serve to indicate that cylinders designed for a working pressure of 1,800 p.s.i. at 15·5° C. will satisfy the general requirements of paragraph 4 (8) (i). In the special case of carbon dioxide, a "tropical" filling ratio of 0·667 is permitted, notwithstanding this requirement, provided the cylinder is fitted with a bursting disc which will discharge the contents before a pressure of 2,850 p.s.i. is attained.

Dissolved Gases

7. For dissolved gases, in addition to the conditions laid down in paragraph 4, sub-paragraphs (1), (2) and (3) above, the following additional conditions are prescribed :—

(1) Acetylene shall be carried only in steel cylinders containing a homogeneous porous substance and with or without acetone or other solvent.

(2) Drawings showing the design of each type of cylinder proposed to be used shall be deposited with the Administration and no cylinder shall be used unless it is of a design approved in writing by the Administration.

(3) The porous substance shall be similar in all respects to a sample deposited with the Administration.

(4) The porous substance shall fill as completely as possible the cylinder and the porosity of the substance shall not exceed 80 per cent.

(5) The acetone or other solvent used shall not be capable of chemical reaction with the acetylene or with the porous substance or with the metal of the cylinder, and the quantity of acetone or other solvent used shall be such that when fully charged with acetylene it shall not completely fill the porosity of the porous substance at any temperature likely to be met with in ordinary practice or use.

(6) The pressure of the gas in the cylinder shall not exceed two hundred and twenty-five (225) pounds to the square inch at a temperature of sixty (60) degrees Fahrenheit. Provided that no cylinder capable when empty of containing one cubic foot of water, or more, which has the ends secured to the body by welding only, and no cylinder in which the porous substance is used without acetone or other solvent, shall be charged to a pressure exceeding one hundred and fifty (150) pounds to the square inch at a temperature of sixty (60) degrees Fahrenheit.

This condition shall not apply to cylinders used exclusively for marine lighting by a General or Local Lighthouse Authority.

(7) Every cylinder shall be tested by hydraulic pressure to a pressure of not less than four times the pressure to which the cylinder is to be subjected in use, such hydraulic pressure to be maintained for a period of fifteen minutes, and no cylinder shall be used which on the first occasion of its being subjected to this test shall show any permanent stretch.

(8) The valves of cylinders shall not contain more than seventy (70) per cent. of copper in their composition.

(9) Every cylinder shall have permanently and conspicuously marked upon it or upon a brass plate secured to it the name of the manufacturer and an indication that it has been authorised by the appropriate Administration. Every cylinder shall bear a label giving the date when it was last charged, together with the name of the firm by whom it was charged, the address of the last charging station, and the maximum pressure allowed in the cylinder.

(10) Every cylinder capable when empty of containing one cubic foot of water, or more, manufactured after the 1st April, 1919, shall have stamped upon it the name or trade mark of the manufacturer and the serial number of the cylinder.

Miscellaneous

8. In the case of special containers for which the approval of the Ministry of Transport and Civil Aviation is required, full particulars should be submitted including the name of the gas it is desired to transport, details of design, detailed specification of the containers and the proposed pressure and/or filling ratios for the nature of the voyage to be undertaken. If such containers are approved

for shipment, the special conditions as to maintenance, periodical inspection and test of the containers, filling ratios and stowage conditions prescribed in the letter of approval must be complied with.

9. Cylinders containing certain inflammable or poisonous gases, and gases in large welded containers, as indicated in Sub-section B of this Section, may not be carried in passenger ships.

10. Except where specially provided for in Sub-section B, not more than 12 tons of gas in large welded containers may be carried in any cargo ship without the special permission of the Ministry of Transport and Civil Aviation.

11. In stowing cylinders or containers of gas the following general conditions shall be observed :—

(1) The cylinders or containers should preferably be stowed under cover in well ventilated spaces and should be well secured to prevent movement ; if carried on the open deck they shall be adequately secured and protected against the risk of damage in heavy weather. In either case, they shall be kept from direct contact with the ship's sides or bulwarks by the interposition of dunnage or cargo of a suitable character or by other effective means.

(2) Cylinders or containers filled with certain gases specified in the schedule shall be stowed away from corrosive or inflammable liquids.

(3) Except where specially provided for in Sub-section B, cylinders or containers containing any gas shall not be overstowed with heavy cargo ; nor must they be carried in or over a hold containing coal without the special permission of the Ministry of Transport and Civil Aviation.

(4) Cylinders or containers other than those containing an inert gas shall be stowed away from any readily combustible solid or strong supporter of combustion.

(5) Cylinders or containers other than those containing an inert gas should be stowed away from living quarters as specified in Sub-section B of this Section.

(6) The special stowage requirements for each particular gas are detailed in Sub-section B of this Section.

12. In ships carrying explosives the conditions set out in Section 1 (page 53) and indicated in Sub-section B of this Section must be observed.

13. Empty cylinders must have their valves securely closed before being sent forward for shipment.

14. Inert gases, helium, argon, etc., carried in glass cylinders at atmospheric pressure are regarded as non-hazardous.

(1) PERMANENT GASES (gases which remain gaseous except at very low temperatures)

(For the carriage of Laboratory Chemicals and/or Medical Preparations in Limited Quantities, see Section 9)

Name of Gas (1)	Characteristic Properties (2)	Packing (3)	Maximum Working Pressure (lb. per square inch at 15·5° C. (60° F.)) (4)	B S Specification Number (5)	Stowage: Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (6)	Stowage: Other Passenger Ships (7)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (8)	Recommended Label or Stencil (9)
AIR, COMPRESSED	Non-inflammable.	Cylinders.	1980	B S. 399 B S. 400 B S 1045	On or under deck. May be overstowed.	As for cargo ships.	7	—
ARGON	Non-inflammable. Odourless. Non-poisonous. Heavier than air.	do.	1980	B.S. 399 B.S. 400 B.S. 1045	do.	do	7	—
BORON TRIFLUORIDE	Non-inflammable. Easily detected odour. Poisonous. May cause ignition when in contact with organic matter. Heavier than air	do	1500	B.S 399 B.S 400	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	Not allowed.	4	C.
CARBON MONOXIDE	Inflammable and explosive with about 12% to 74% in air. Poisonous, even in small quantities. Odourless. About as heavy as air	do	1980	B S. 399 B.S. 400	On deck only, adequately secured, and well away from living accommodation, corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	None.	A3 and C.
COAL GAS	Inflammable. Composition varies considerably. Forms explosive mixture with air. Poisonous. Lighter than air	do	1980	B.S 399 B.S. 400	On deck adequately secured, or under deck, in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	A3.
FLUORINE	Non-inflammable. Yellow coloured. May inflame in contact with hydrogen. Very re-active—may ignite organic substances and attacks most metals. Decomposes water to form hydrofluoric acid. Poisonous. Very injurious to membranes and tissues. Heavier than air.	Cylinders specially approved by the Ministry of Transport and Civil Aviation.			On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), food, foodstuffs, corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion. Not to be stowed with consignments of sodium, potassium, magnesium, phosphorus, copper leaf, powdered antimony, turpentine, ammonia or sal-ammoniac, coal gas, ethylene, hydrogen, methane or acetylene.	do	3	C.
HELIUM	Non-inflammable Non-poisonous. Much lighter than air.	Cylinders.	1980	B S. 399 B S. 400	On or under deck. May be overstowed.	As for cargo ships.	7	—

(For the carriage of Laboratory Chemicals and/or Medical Preparations in Limited Quantities, see Section 9)

Name of Gas (1)	Characteristic Properties (2)	Packing (3)	Maximum Working Pressure (lb. per square inch at 15·5° C. (60° F.)) (4)	B.S. Specification Number (5)	Stowage			Recommended Label or Stencil (9)
					Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (6)	Other Passenger Ships (7)	Restrictions on stowage in relation to explosives (see p. 52) (8)	
HYDROGEN	Inflammable. Explosive with about 4% to 75% in air. Non-poisonous. Much lighter than air.	Cylinders.	1980	B.S. 399 B.S. 400	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed	3	A3.
KRYPTON	Non-inflammable. Non-poisonous. Heavier than air.	do.	1800	B.S. 399 B.S. 400 B.S. 1045	On deck adequately secured, or under deck in a well ventilated space. May be overstowed.	As for cargo ships	7	—
METHANE	Inflammable. Forms explosive mixtures with air. Non-poisonous. Lighter than air. Explosive with 5% to 14% in air.	do.	1980	B.S. 399 B.S. 400	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	A3
NEON	Non-inflammable. Odourless. Non-poisonous. Lighter than air.	do.	1980	B.S. 399 B.S. 400 B.S. 1045	On or under deck. May be overstowed.	do.	7	—
NITROGEN	Non-inflammable. Non-poisonous. About as heavy as air.	do.	1980	B.S. 399 B.S. 400 B.S. 1045	do.	do.	7	—
OXYGEN (see also Liquefied Gases) OXYGEN AND CARBON DIOXIDE MIXTURES	Non-inflammable. Odourless. Strong supporter of combustion. May, if present in excess, cause self-ignition of rags, sawdust, or other finely divided organic material. Slightly heavier than air.	do.	1980	B.S. 399 B.S. 400 B.S. 1045	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from corrosive or inflammable liquids or readily combustible solids.	do.	4 below deck. None on deck.	F.

(2) LIQUEFIED GASES (gases which remain liquid under pressure at normal temperatures)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
AIR (LIQUID)	Non inflammable. Strong supporter of combustion. Accelerates fire. May cause self-ignition of rags, sawdust and other finely divided material.	Suitably insulated containers. The metal from which the containers are made must be sufficiently strong to withstand without damage the very low temperature of the liquid. Adequate relief arrangements must be made to prevent excess pressure arising from vaporisation of the liquid. The containers must be fitted with permanent lifting slings and be adequately protected from shock or damage in transit.						On deck only for Home Trade voyages (within the limits defined in Sect. 742 of M.S.A. 1894) well away from corrosive or inflammable liquids and readily combustible solids. Not to be overstowed. As there is a continual escape of gas from the containers, smoking and the use of naked lights in the vicinity of the liquid should be prohibited and a notice to that effect displayed near the place of stowage.	As for cargo ships	None.	—
AMMONIA, ANHYDROUS	Pungent odour. Poisonous. Suffocating even in small quantities. Lighter than air. Explosive with about 16% to 27% in air.	(1) Cylinders.	B.S. 401	0·54	241	0·51	412	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, strong supporters of combustion and chlorine.	(1) do.	5	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		0·54		0·51		(2) As for cylinders. Not more than 50 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56).	(2) Not allowed.	do.	C.
		(3) Specially constructed large tanks approved by the Ministry of Transport and Civil Aviation.		The filling ratio, dependent upon the nature of the voyage, will be notified at the time of approval of the containers.				(3) Special stowage.	(3) do.	do.	C.
BLAU GAS	Inflammable and poisonous.	Cylinders.	B.S. 401	General conditions of filling, see paragraph 4 (8) of Sub Section A of this Section (Page 54).				On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	do.	3	A3 and C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 55)	Recommended Label or Stencil
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
BORON TRICHLORIDE	Very corrosive in presence of moisture. Heavier than air.	Cylinders.	B.S. 401	1·41	27	1·06	55	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids or strong supporters of combustion.	As for cargo ships	6	D
BUTADIENE	Inflammable. Forms explosive mixture with air. Heavier than air. Must be suitably stabilised.	do.	B.S. 401	0·53	57	0·50	104	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed	3	A3
CARBON DIOXIDE	Non-inflammable. Odourless. Heavier than air. Non-poisonous.	do.	B.S. 401 B.S. 1287 B.S. 1288	0·75 * Filling ratio 0·667 when bursting discs are fitted. If not fitted, filling ratio to be 0·60.	2215	0·667* or 0·60	2700	On or under deck. May be overstowed.	As for cargo ships.	7	—
CARBON DIOXIDE AND OXYGEN MIXTURES.		AS FOR OXYGEN									
CARBON DIOXIDE BULBS (syphon bottle charges or sparklets).	Non-inflammable. Odourless. Heavier than air.	Small capsules containing up to one-third of an ounce each, packed in cardboard cartons in strong wooden cases.		0·75		0·75		May be carried without restriction.	May be carried without restriction.	None	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater.	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CHLORINE	Non-inflammable. Poisonous. Pungent odour and greenish-yellow colour gives warning of dangerous quantities in air. Injurious to membranes and tissues. May cause combustion of acetylene, turpentine and finely divided organic material. Heavier than air	(1) Cylinders.	B.S. 401	1·25	174	1·19	283	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A) page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion. Not to be stowed with consignments of sodium, potassium, phosphorous, copper leaf, powdered metals, turpentine, ammonia, or sal-ammoniac, nor with coal gas, hydrogen, methane or acetylene.	(1) Not allowed.	3	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·25		1·19		(2) As for cylinders. Not more than 50 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56).	(2) do.	3	C.
CHLORODIFLUOROMETHANE (Freon 22, Arcton 4, Monochlorodifluoromethane).	Non-inflammable. Odourless. Non-poisonous. Decomposes when passed through flames, evolving hydrochloric and hydrofluoric acid fumes. Much heavier than air	(1) Cylinders.	B.S. 401	1·00	238	0·90	380	(1) On deck adequately secured, or under deck. May be overstowed	(1) As for cargo ships	7	—
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·00		0·90		(2) As for cylinders. No limit.	(2) do.	do.	—
CHLOROTRIFLUOROMETHANE (Freon 13, Trifluorochloromethane).	Non-inflammable, non-poisonous.	Cylinders.	B.S. 401	0·95	1980	0·90	1980	On or under deck. May be overstowed.	do.	7	—
CYANOGEN	Inflammable. Highly poisonous. Pungent odour. Colourless. Soluble in water. Heavier than air.	do.	B.S. 401	0·75	134	0·72	230	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	Not allowed	3	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CYCLOPROPANE	Inflammable. Explosive with about 2% to 10% in air. Anaesthetic. Heavier than air	Cylinders	B.S. 401	0·51	171	0·48	272	On deck adequately secured or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	As for cargo ships	3	A3
DICHLORODI-FLUOROMETHANE (Freon 12, Arcton 6)	Non-inflammable. Odourless. Non poisonous. Decomposes when passed through flames, evolving hydrochloric and hydrofluoric acid fumes. Heavier than air	(1) do. (2) Large welded containers, approved by the Ministry of Transport and Civil Aviation.	B.S. 401	1·18 1·18	141	1·08 1·08	230	(1) On or under deck. May be overstowed. (2) As for cylinders. No limit	(1) do (2) do	7 do	— —
DIMETHYL ETHER	Inflammable. Explosive with about 2% to 50% in air. Anaesthetic. Heavier than air	Cylinders	B.S. 401	0·59	131	0·56	220	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed.	3	A3.
DIMETHYLAMINE	Inflammable. Slightly heavier than air	do	B.S. 401	0·57	84	0·54	156	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	do.	3	A3.
ETHANE	Inflammable. Odourless. Explosive with about 3% to 12% in air. Approximately the same density as air	Cylinders.	B.S. 401	0·36	1980	0·32	1980	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	As for cargo ships	3	A3

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater.	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ETHYL CHLORIDE (Chloroethane).	Inflammable. Explosive with about 3% to 12% in air Liquid at temperatures below 54° F (12° C.) or under pressure. Fl pt below 0° F Immiscible with water. Heavier than air Anaesthetic.	(1) Cylinders.	B.S. 401	0·82	29	0 79	60	(1) On deck adequately secured, or under deck in a well ventilated space Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) As for cargo ships	3	A3.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation						(2) As for cylinders Not more than 12 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56)	(2) Not allowed.	do.	A3.
Note.—When packed in drums or in small hermetically sealed glass containers in cases, see Section 5.											
ETHYLENE	Inflammable. Explosive with about 2% to 28% in air. Anaesthetic. About as heavy as air.	Cylinders.	B.S. 401 B.S. 1287 B.S. 1288	0·325	2300	0 270	2160	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	A3
ETHYLENE OXIDE (Oxirane, Epoxyethane).	Inflammable. Poisonous Anaesthetic. Ether like odour Explosive with 2% to 80% in air Liquid at temperatures below 51° F (11° C.) Soluble in water Heavier than air To prevent potential explosive poly condensation, it is necessary rigidly to exclude acids and bases of all kinds, and chlorides Water should also be excluded.	do.	B.S 401	0 79	35	0 76	77	On deck adequately secured, or under deck in a well ventilated space. To be kept as cool as possible. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), food, foodstuffs, corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	do.	3	A3 and C.
Note.—When packed in drums or in glass containers in cases, see Section 5											
ETHYLENE OXIDE 90% BY WEIGHT AND CARBON DIOXIDE 10% BY WEIGHT	As for ETHYLENE OXIDE.	Cylinders.	B.S. 401	0·80	138	0 77	212	As for ETHYLENE OXIDE.	Not allowed.	3	A3 and C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))					
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ETHYLENE OXIDE/NITROGEN MIXTURE (0·2% NITROGEN).	As for ETHYLENE OXIDE.	Cylinders.	B.S. 401	0·79	118	0·76	158	As for ETHYLENE OXIDE.	Not allowed.	3	A3 and C.
HYDROCARBON GAS (BOTTOGAS, CALOR GAS).	Inflammable. May be a definite gas or a mixture of any of the liquefiable petroleum gases. Mixtures of vapour with air in certain proportions will be explosive. Heavier than air	Containers specially approved by the Ministry of Transport and Civil Aviation.		General conditions as to filling, see paragraph 4 (8) of Sub-Section A of this Section (Page 54)				On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion. Subject to any special conditions laid down in the letter of approval.	On deck only. Total quantity should not exceed 5 tons gross weight per 100 feet length of the ship and in no case should it exceed 25 tons gross without the permission of the Ministry of Transport and Civil Aviation.	3	A3
HYDROGEN CHLORIDE (Hydrochloric Acid Gas)	Non-inflammable. Fumes are irritant to mucous membranes. In presence of moisture fumes will show as vapour cloud and a weak solution of hydrochloric acid may form which will attack iron and steel with evolution of hydrogen gas. Miscible with water.	Cylinders	B.S. 401	0·58	1036	0·42	1545	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	Not allowed.	5	D.
HYDROGEN CYANIDE STABILISED (See page 116) (Hydrocyanic Acid).	Almond odour. Poisonous even at minute dilution in air. Liquid at temperatures below 80° F. (27° C.). Inflammable. Decomposes and polymerises in the presence of iron and alkali unless a stabiliser is added. Explosive with 5% to 40% in air	do.	B.S. 401	0·60	12	0·57	32	On deck adequately secured or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried over holds containing coal. Away from food, foodstuffs, living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	C.

Note.—For Alternative Packings, see Section 4A.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures: Temperate Climates (Maximum Temperature 45° C. (113° F.)): Filling Ratio	Temperate Climates: Working (Gauge) Pressure (lb. per square inch)	Tropical Climates (Maximum Temperature 65° C. (149° F.)): Filling Ratio	Tropical Climates: Working (Gauge) Pressure (lb. per square inch)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
HYDROGEN FLUORIDE (Hydrofluoric Acid Anhydrous)	Non inflammable. Fumes in air Poisonous Injurious to the skin Very corrosive to metals and glass in the presence of moisture Heavier than air Liquid at temperatures below 68° F (20° C.)	(1) Cylinders.	B.S. 401	0 85	19	0 80	44	(1) On deck only, adequately secured and well clear of living accommodation. Away from corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion. Not to be overstowed. Not to be carried over holds containing coal.	(1) Not allowed	None.	C and D.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		0 85				(2) As for cylinders Not more than 12 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56)	(2) do.	None	C and D
HYDROGEN SULPHIDE (Sulphuretted Hydrogen).	Poisonous even in small quantities (much less than 1%) Inflammable Foul odour Explosive with about 4% to 46% in air Slightly heavier than air.	Cylinders.	B.S. 401	0 68	448	0·63	695	On deck adequately secured, or under deck in a well ventilated space Not to be overstowed by heavy cargo Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	do.	3	A3 and C.
METHYLAMINE (Monomethylamine)	Inflammable. Pungent ammonia-like odour Suffocating Slightly heavier than air	do.	B.S. 401	0·57	84	0·54	156	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	A3
METHYL BROMIDE (Bromomethane).	Non-inflammable Very faint chloroform-like odour Is a volatile, colourless liquid at normal temperatures. Poisonous even at low concentrations. Heavier than air	(1) do.	B.S. 401	1·45	49	1 39	101	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food and foodstuffs	(1) do.	7	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·45		1 39		(2) As for cylinders Not more than 12 tons of gas in these containers may be carried in any ship (see paragraph 10, page 56)	(2) do.	do.	C
		Note.—When packed in tins or glass containers in wooden cases, see Section 4A.									

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 3)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratio and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 55)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
METHYL BROMIDE (Bromomethane.) (*Contd.*)		(3) Made up fire extinguishers. If containers are of suitable strength, in good condition and free from rust, may be packed with suitable absorbent material in wooden cases						(3) On or under deck. Away from living quarters (see definition(A), page 5), food and foodstuffs.	(3) Not allowed.	None.	C when cased
METHYL CHLORIDE (Chloromethane).	Inflammable. Faint sweet odour like ether. Explosive with about 8% to 19% in air. Anæsthetic. Evolves hydrochloric acid when burned. Heavier than air	(1) Cylinders	B.S. 401	0·83	125	0·78	207	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) As for cargo ships	3	A3.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		0·83		0·78		(2) As for cylinders. Not more than 12 tons of gas in these containers may be carried in any ship (see paragraph 10, page 56).	(2) Not allowed.	3	A3.
NITROGEN TETROXIDE (Nitrogen Peroxide)	Non-inflammable. Gas is reddish brown in colour. Powerful oxidising agent. Poisonous. Corrodes metals when moist due to formation of nitric acid. Heavier than air	Cylinders specially approved by the Ministry of Transport and Civil Aviation.		1·25	26	1·20	73	On deck only, adequately secured and well clear of living accommodation. Away from corrosive or inflammable liquids and readily combustible solids. Not to be carried over holds containing coal.	do.	None.	C.
NITROSYL CHLORIDE	Non-inflammable. Involved in a fire will form chlorine and one of the oxides of nitrogen as products of decomposition. Corrosive to iron and steel.	Cylinders specially approved by the Ministry of Transport and Civil Aviation.		1·10	74	1·04	133	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	6	D
NITROUS OXIDE.	Non-inflammable. Colourless and sweet tasting. Anæsthetic. Will support combustion. Heavier than air.	Cylinders	B.S. 401 B.S. 1287 B.S. 1288	0·75 * If more than 0·1% impurities present, filling ratio should be 0·625	2025	0·667*	2450	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids and readily combustible solids	As for cargo ships	None.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage		Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater.	Other Passenger Ships		
				Filling Ratio	Working (Gauge) Pressure (lb per square inch)	Filling Ratio	Working (Gauge) Pressure (lb per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
OIL GAS	Inflammable.	Cylinders	B.S. 401	General conditions of filling, see paragraph 4 (8) of Sub-Section A of this Section (page 54)				On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed.	3	A3
OXYGEN (LIQUID)	Non-inflammable. Strong supporter of combustion. Accelerates fire. May cause self-ignition of rags, sawdust and other finely divided material.	Suitably insulated containers. The metal from which the containers are made must be sufficiently strong to withstand without damage the very low temperature of the liquid. Adequate relief arrangements must be made to prevent over-pressure arising from vaporisation of the liquid. The containers must be fitted with permanent lifting slings and be adequately protected from shock or damage in transit.						On deck only for Home Trade voyages (within the limits defined in Sect. 742 of M.S.A. 1894) well away from corrosive or inflammable liquids and readily combustible solids. Not to be overstowed. As there is a continual escape of gas from the containers, smoking and the use of naked lights in the vicinity of the liquid should be prohibited and a notice to that effect displayed near the place of stowage.	As for cargo ships.	None.	F
PETROLEUM GAS (Butane, Propane, Isobutane)	Inflammable. Usually a mixture of butane, propane and isobutane. Forms explosive mixture with air. Heavier than air	Special containers approved by the Ministry of Transport and Civil Aviation		General conditions as to filling, see paragraph 4(8) of Sub-Section A of this Section (page 54)				On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	On deck only. Total quantity should not exceed 5 tons gross weight per 100 feet length of the ship and in no case should it exceed 25 tons gross weight without the permission of the Ministry of Transport and Civil Aviation.	3	A3

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(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PHOSGENE (Carbonyl Chloride)	Non-inflammable. Extremely poisonous. Corrodes metals in the presence of moisture. Very much heavier than air.	(1) Cylinders	B.S 401	1·25	53	1·19	95	(1) On deck only, adequately secured and away from living accommodation. Away from corrosive and inflammable liquids, readily combustible solids and strong supporters of combustion. Not to be carried over holds containing coal.	(1) Not allowed.	4	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation		1·25		1·19		(2) As for cylinders. Not more than 12 tons of gas in these containers may be carried in any ship (see paragraph 10, page 56)	(2) do	do.	C.
PROPYLENE (Propene).	Inflammable. Explosive with about 2% to 10% in air. Anesthetic. Heavier than air	Cylinders.	B.S 401	0·44	253	0·40	387	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	As for cargo ships.	3	A3.
SULPHUR DIOXIDE	Non-inflammable. Pungent odour. Suffocating, even in small quantities (less than 1%). Much heavier than air	(1) do.	B.S 401	1·25	91	1·19	168	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) do	5	—
		(2) Large welded containers, approved by the Ministry of Transport and Civil Aviation.		1·25		1·19		(2) As for cylinders. Not more than 12 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56)	(2) Not allowed.	do.	—
		(3) Strong glass syphons not exceeding 3½ lb. capacity each and not more than seven-eighths filled. The syphons should be embedded in kieselguhr (infusorial earth), or sawdust or whiting or a mixture of the two and packed in strong wooden cases. Gross weight of each case not to exceed 2 cwt.						(3) As for cylinders.	(3) As for cargo ships.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
				Filling Ratio	Working (Gauge) Pressure (lb per square inch)	Filling Ratio	Working (Gauge) Pressure (lb per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SULPHUR DIOXIDE (*Contd.*)		(4) Small tin-coated iron or copper cylinders packed in cases as at (3).						(4) As for cylinders	(4) As for cargo ships	5	—
TRIMETHYLAMINE	Inflammable. Pungent fish-like odour	Cylinders	B.S. 401	0·57	84	0·54	156	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	Not allowed.	3	A3

(3) DISSOLVED GASES

Name of Gas (1)	Characteristic Properties (2)	Packing (3)	Maximum Working Pressure (lb. per square inch at 60° F 15·5° C.) (4)	B S Specification Number (5)	Stowage			Recommended Label or Stencil (9)
					Cargo Ships and Passenger Ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (6)	Other Passenger Ships (7)	Restrictions on stowage in relation to explosives (see p. 53) (8)	
ACETYLENE	Inflammable. Violently explosive over a wide range of mixtures in air (3% to 75% for pure acetylene) Anaesthetic. Lighter than air	(1) Steel cylinders, approved by the Administration, containing an approved homogeneous porous mass and with acetone or other solvent.	225	B S 401 For special conditions as to cylinders for Acetylene, see Sub-Section A of this Section	(1) On deck adequately secured, under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B) page 5), corrosive and inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) Not allowed.	3	A3
		(2) Steel cylinders with welded ends, approved by the Administration, and containing an approved homogeneous porous mass with acetone or other solvent.	150		(2) As for (1).	(2) do.	3	do.
		(3) Cylinders approved by the Administration and containing an approved porous mass without solvent. (For special and experimental purposes.)	150		(3) As for (1	(3) do	3	do

(Category (iii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Corrosive Substances

GENERAL NOTES

1. General

This Section includes substances which, if leakage occurs, may, by reason of their corrosive properties, be a source of danger to the ship, to the men handling them and to adjacent cargo.

The table which follows should be consulted in regard to the degree of hazard, which varies considerably according to the nature of the substance.

Certain of the substances evolve corrosive and/or poisonous fumes, and in the event of damage to a container, care should be taken not to breathe these fumes.

2. Packing

The substances should be packed as indicated in the table

Packing material may be required :—

(i) for protective purposes only ;

(ii) for protective purposes and also for the absorption of liquid in the event of breakage ; and

(iii) in some special instances for neutralisation in the event of breakage.

In most cases the packing material may be corrugated paper, sawdust, wood wool or similar material, but in certain special cases as specified in the table, kieselguhr, whiting, whiting and sawdust or other approved substances must be used for packing purposes. For example, an intimate mixture of sawdust and whiting or whiting and coarse exfoliated vermiculite as specified in the table has been approved in certain cases for use with nitric acid and chromic acid solution.

All packages must conform to the general principles set out in the General Recommendations (pages 5 and 6). Where " effective absorbent material " is specified it must comply with the definition of " effective " on pages 5 and 6, and in addition, when two or more containers of a diameter exceeding 3½ inches (90 mm) are packed in a case, the case must contain an internal partition or partitions, with the object of maintaining the position of each such container in relation to each other such container in the case.

Adequate air space must be left in the containers for thermal expansion as set out in the table.

Where no weight or capacity limit is specified there is no restriction on the weight or capacity of packages

3. Stowage

Detailed stowage precautions are shown in the table. Where the stowage regulations provide that a substance is to be carried on deck only, or is prohibited in passenger ships it is nevertheless permissible to ship that substance on or under deck and/or in passenger ships when it is in compliance with Section 9, applicable to laboratory chemicals and/or medicinal preparations in limited quantities

4. Empty Containers

Empty containers which have lately been used for the carriage of some corrosive substances are liable to present a hazard, and attention should be paid to the hazard attached to the corrosive substance last carried. In the case of certain substances additional hazard may arise due to the reaction of water or air with any residual material. The shipper must declare the substance last carried unless the containers are clean and dry

Care should be taken to see that all such empty containers are effectively closed

5. This section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities

TABLE OF CORROSIVE SUBSTANCES

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	(11)
ACETIC ACID Aqueous Solution 80% to 90% w/w (Vinegar Acid).	Liquid with pungent odour. Corrodes lead and certain other metals. Combustible. Fl. pt. about 110° F. depending on concentration of aqueous solution.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	D.
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed.	10%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container.	—	(2) do.	(2) do.	do.	D.
		(3) Glass or earthenware containers of suitable make, effectively closed.	10%	15 gal.	(3) Packed singly in :— (a) wicker hampers with wicker bonnets ; or	—	(3) do.	(3) do.	do.	D

(continued overleaf)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 83) (10)	
ACETIC ACID Aqueous Solution 80% to 90% w/w (Vinegar Acid) (Contd.)					(b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material					
		(4) Suitable stainless steel, aluminium-lined iron, aluminium-lined steel or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed.	10%	100 gal	(4) —	—	(4) On or under deck.	(4) As for cargo ships	7	D.
		(5) Suitable wooden barrels, effectively closed	10%	50 gal.	(5) —	—	(5) do.	(5) do.	do.	D.
ACETIC ACID GLACIAL and over 90% w/w	Liquid at 60° F with pungent irritating odour. Ice-like solid below 60° F Soluble in water. Corrosive to lead and certain other metals. Inflammable. Fl. pt. about 110° F Irritant to skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) do	(1) do.	6	D.
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed	10%	6 gal	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container	—	(2) do	(2) do.	do.	D.
		(3) Glass or earthenware containers of suitable make, effectively closed	10%	15 gal.	(3) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material	—	(3) do	(3) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
ACETIC ACID GLACIAL and over 90% w/w (*Contd.*)		(4) Suitable stainless steel, aluminium-lined iron, aluminium-lined steel, or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed	10%	100 gal.	(4) —	—	(4) On or under deck.	(4) As for cargo ships	6	D.
		(5) Suitable wooden barrels, lined or coated internally with wax or other suitable material, effectively closed.	10%	50 gal.	(5) —	—	(5) do.	(5) do.	do.	D.
ACETIC ANHYDRIDE (Acetic Oxide or Acetyl Oxide)	Liquid. Pungent odour. Decomposes in water, forming acetic acid. Combustible. Fl. pt. about 130° F. Irritant to skin and mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	7½%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Not in contact with strong supporters of combustion or strong acids.	(1) do.	do.	D.
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed.	7½%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container.	—	(2) do.	(2) do.	do.	D.
		(3) Glass or earthenware containers of suitable make, effectively closed.	7½%	15 gal.	(3) Packed singly in:— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material	—	(3) do.	(3) do.	do.	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
ACETIC ANHYDRIDE (Acetic Oxide or Acetyl Oxide) (*Contd.*)		(4) Suitable stainless steel, aluminium - lined iron, aluminium - lined steel or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed	7½%	100 gal.	(4) —	—	(4) On or under deck. Not in contact with strong supporters of combustion or strong acids.	(4) As for cargo ships.	6	D:
ACID BUTYL PHOSPHATE (Butyl Phosphoric Acid)	Viscous liquid at 68°F (20° C.). Mildly corrosive to steel	PACKING, STOWAGE AND LABELLING AS FOR PHOSPHORIC ACID (page 92)								
ALUMINIUM CHLORIDE ANHYDROUS (The solution or hydrated form is non-dangerous)	Solid. Reacts vigorously with water, forming hydrochloric acid. Corrosive to most metals in the presence of moisture.	(1) Glass or earthenware containers of suitable make, effectively closed	—	7 lb.	(1) Packed with suitable protective material in wooden cases. Not more than 28 lb. per case	—	(1) On deck only. Away from acids.	(1) do.	None.	D
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	3 cwt	(2) —	—	(2) do	(2) do.	do.	D.
AMMONIUM COMPOUNDS other than those listed in these recommendations	Not dangerous but should be away from chlorates and strong alkalis, e.g. lime, limewash, caustic soda, etc.								6	—
AMMONIUM HYDROGEN FLUORIDE (Ammonium Bifluoride).	Solid. Becomes corrosive in the presence of moist air.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Should not be in contact with chlorates or strong alkalis, e.g. lime, limewash, caustic soda, etc.	(1) As for cargo ships.	do.	—
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM HYDROGEN FLUORIDE (Ammonium Bifluoride) (*Contd.*)		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) On or under deck. Should not be in contact with chlorates or strong alkalis, e.g. lime, limewash, caustic soda, etc.	(3) As for cargo ships	6	—
		(4) Suitable vulcanised rubber lined cartons effectively closed with a double cap	—	—	(4) do	—	(4) do	(4) do.	do	—
		(5) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed	—	—	(5) —	—	(5) do.	(5) do.	do.	—
		(6) Suitable wooden barrels, effectively closed	—	—	(6) —	—	(6) do.	(6) do.	do.	—
		(7) Suitable drums of fibreboard or plywood, lined or coated internally with wax or other suitable material, effectively closed	—	—	(7) —	—	(7) do.	(7) do	do.	—
AMMONIUM THIOCYANATE (Ammonium Sulphocyanide)	Solid. When wet will corrode metals. When attacked by acids gives rise to Carbonyl Sulphide, which is an inflammable and narcotic gas	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids. Not in same compartment as food or foodstuffs, and not in contact with chlorates or strong alkalis, e.g. lime, limewash, caustic soda, etc	(1) do.	do.	—
		(2) do	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM THIOCYANATE (Ammonium Sulphocyanide). (*Contd.*)		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from acids. Not in the same compartment as food or foodstuffs, and not in contact with chlorates or strong alkalis, e.g. lime, limewash, caustic soda, etc.	(3) As for cargo ships.	6	—
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) do.	—	(4) do.	(4) do.	do.	—
		(5) Suitable barrels or cases of wood or suitable fibre board drums, effectively closed.	—	—	(5) —	—	(5) do.	(5) do	do.	—
ANTIMONY PENTACHLORIDE (Antimony Perchloride)	Oily liquid, offensive odour. Solidifies on absorption of water. Fumes in moist air. Irritant to skin and mucous membranes. Poisonous. With excess of water forms hydrochloric acid.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. of liquid in each case.	—	(1) On deck only	(1) As for cargo ships.	None.	D.
		(2) do.	5%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.	—	(2) do.	(2) Not allowed	do.	D.
ANTIMONY TRICHLORIDE (Antimonious Chloride, Caustic Antimony, Butter of Antimony, or Mineral Butter).	Solid. Absorbs water. Poisonous. Very corrosive to metals. Technical grades are often in liquid form. The solution in water is strongly acid.	(1) do.	5% if liquid.	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. of liquid in each case.	—	(1) On or under deck. Not in the same compartment as food or foodstuffs. Away from living quarters (see Def. (A), page 5).	(1) As for cargo ships.	6	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ANTIMONY TRICHLORIDE (Contd.)		(2) Glass or Earthenware containers of suitable make, effectively closed	5% if liquid.	6 gal. if liquid.	(2) Packed singly in:— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material	—	(2) On deck only.	(2) Not allowed.	None.	D.
		(3) For Antimony Trichloride Crystalline only Suitable polythene liners hermetically sealed, in outer suitable steel drums, hermetically sealed.	—	1 cwt.	—	—	(3) On deck only.	(3) Not allowed.	6	D
BATTERIES, ELECTRIC STORAGE, "Wet or Charged" (Accumulators, Electric) When charged electrically the terminals should be so insulated that no short circuit can occur. When filled with electrolyte either acid or alkaline solution, the electrolyte should be so incorporated that no spillage can occur		Wooden cases or crates with suitable protective material.	—	—	—	—	On or under deck. Away from inflammable substances and strong supporters of combustion.	As for cargo ships	6 if containing electrolyte.	D if containing electrolyte
BATTERY FLUID (ELECTROLYTE) (1) Sulphuric Acid of specific gravity not exceeding 1·405	Properties and hazards as for Sulphuric Acid of specific gravity not exceeding 1·405	May be carried under the conditions laid down for Sulphuric Acid of specific gravity not exceeding 1·405. (Page 105).								D.

(continued overleaf)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BATTERY FLUID (ELECTROLYTE). (*Contd.*) (2) Sulphuric Acid of specific gravity exceeding 1·405.	Properties and hazards as for Sulphuric Acid of specific gravity exceeding 1·405.	May be carried under the conditions laid down for Sulphuric Acid of specific gravity exceeding 1·405. (Page 103)								D
(3) Solutions of Potassium Hydroxide (Caustic Potash)	Properties and hazards as for Potassium Hydroxide (liquid)	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Not in contact with ammonium salts, aluminium, zinc or alloys thereof.	(1) As for cargo ships	7	D
		(2) do.	5%	15 gal.	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.	—	(2) do	(2) do.	do.	D
		(3) Tins or cans of suitable make, effectively closed	5%	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do	D.
		(4) Suitable metal drums (e.g. steel), effectively closed	5%	100 gal	(4) —	—	(4) do	(4) do.	do.	D
BENZOYL CHLORIDE	Liquid. Pungent irritating odour. Decomposed by water forming hydrochloric acid which is corrosive to certain metals. Fumes may cause suffocation. Irritant to skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) Not allowed	4	D
		(2) do	5%	11 gal	(2) Packed singly in:— (a) wicker hampers with wicker bonnets; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (c) wooden cases with suitable protective material	—	(2) do.	(2) do	do	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 57)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BENZOYL CHLORIDE (*Contd.*)		(3) Suitable metal drums (e.g. steel), effectively closed	5%	20 gal.	(3) —	—	(3) On deck only.	(3) Not allowed.	4	D
BORON TRIFLUORIDE ACETIC ACID COMPLEX	Fuming liquid with pungent, irritating smell Corrosive to certain metals including iron and mild steel.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	2½ gal.	(1) Packed with effective absorbent material in wooden cases Not more than 10 gal in each case	—	(1) On deck only.	(1) Not allowed.	4	D
		(2) Suitable aluminium drums, effectively closed.	—	—	(2) —	5 cwt.	(2) do	(2) do.	do	D.
CALCIUM HYDROGEN SULPHITE SOLUTION (Calcium Bisulphite Solution)	Liquid. In contact with most acids sulphur dioxide is evolved	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck Not in contact with acids	(1) As for cargo ships.	7	—
		(2) do	5%	15 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material.	—	(2) do	(2) do	do.	—
		(3) Suitable wooden barrels, effectively closed.	5%	—	(3) —	—	(3) do.	(3) do.	do.	—
CHLOROACETIC ACID (Monochloroacetic Acid)	Crystals or liquid. Crystals readily absorb water and are easily soluble in water Corrosive Caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) do.	6	D.
		(2) do	10%	15 gal	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHLOROACETIC ACID (Monochloroacetic Acid) (*Contd.*)		(3) Suitable polythene bags, effectively closed.	10%	—	(3) Suitable steel drums, effectively closed.	—	(3) On or under deck.	(3) As for cargo ships.	6	D.
		(4) Suitable watertight hardwood casks or barrels, effectively closed.	10%	5 cwts.	(4) —	—	(4) do.	(4) do	do.	D.
CHLOROACETYL CHLORIDE	Corrosive liquid Pungent odour Decomposes in water evolving hydrochloric acid fumes Irritant to skin and mucous membranes Excessive amounts may cause suffocation.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ g.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) Not allowed.	4	D.
		(2) do.	10%	6 gal	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material.	—	(2 do.	(2) do	do.	D.
CHLOROSULPHONIC ACID (with or without Sulphur Trioxide).	Liquid Fumes in air giving off dense white clouds of vapour. Corrosive and is violently reactive in contact with water with evolution of steam and hydrochloric acid fumes. Caustic to the skin. Irritating to throat and eyes in a confined space.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases Not more than 10 gal. in each case.	—	(1) On deck only	(1) Not allowed.	4	D.
		(2) Suitable metal drums (e.g steel), effectively closed.	10%	10 gal.	(2) —	—	(2) do.	(2) do	do.	D.
		(3) Steel drums specially approved by the Ministry of Transport and Civil Aviation.	—	—	(3) —	—	(3) do.	(3) do	do.	D
		(4) Specially strong small steel containers.	—	—	(4) Packed in wooden cases.	—	(4) On or under deck.	(4) do.	do	D
CHROMIC ACID C (Solution).	Poisonous and corrosive. May cause fire in contact with combustible substances	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with effective absorbent and protective packing material in wooden cases Not more than 10 gal. in each case. The absorbent and protective packing material may consist of kieselguhr, whiting, or an intimate mixture of sawdust and whiting, such that there is present in the mixture not less than ¾ lb of whiting and not more than ½ lb of sawdust per lb of Chromic Acid solution or an intimate mixture of coarse exfoliated vermiculite and whiting consisting of 70% to 80% whiting by weight and 20% to 30% exfoliated vermiculite by weight or other substance approved by the Ministry of Transport and Civil Aviation.	—	(1) On deck only Away from combustible cargo.	(1) As for cargo ships.	do.	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHROMIC ACID (Solution) (*Contd.*)		(2) Glass or earthenware containers of suitable make, effectively closed	5%	11 gal	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper , or (*c*) wooden cases, the container being packed with protective packing material specified for packing (1) above, well pressed down and enclosed to prevent loss of packing, the thickness of such packing between any part of the container and any part of the inside of the case must not be less than 1½ inches (38 mm).	—	(2) On deck only. Away from combustible cargo	(2) As for cargo ships.	4	D.
CHROMIC FLUORIDE	In solution gives off hydrogen fluoride gas. Absorbs water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	2½ gal.	(1) Packed with effective absorbent material in wooden cases	—	(1) On or under deck	(1) As for cargo ships	4	D.
		(2) Suitable wooden barrels, lined or coated internally with wax or asphaltum or other suitable material, effectively closed	—	—	(2) —	—	(2) do.	(2) do.	do.	D
COPPER THIOCYANATE (Copper Sulphocyanide)	Solid. When wet will corrode metals. If attacked by acids will give rise to Carbonyl Sulphide which is an inflammable and narcotic gas.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed in wooden cases with suitable protective material.	—	(1) On or under deck. Away from acids. Not in same compartment as food or foodstuffs.	(1) As for cargo ships.	6	—
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do	do.	—

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 50)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
COPPER THIOCYANATE (Copper Sulphocyanide) (*Contd.*)		(3) Suitable barrels or cases of wood effectively closed	—	—	(3) —	—	(3) On or under deck Away from acids Not in the same compartment as food or foodstuffs.	(3) As for cargo ships	6	—
		(4) Suitable drums of fibreboard or plywood, effectively closed	—	2 cwt.	(4) —	—	(4) do	(4) do.	do.	—
DIPHENYLMETHYL BROMIDE	Liquid. Pungent fumes	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal	(1) Packed with whiting or other effective absorbent material in wooden cases	—	(1) On deck only	(1) Not allowed	None.	D.
		(2) do	10%	6 gal.	(2) Packed singly in ;— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material	—	(2) do.	(2) do	do.	D.
FERRIC CHLORIDE (Iron Chloride, Iron Perchloride, Iron Sesquichloride).	Solid. Absorbs moisture from the air and in this condition is corrosive to iron and certain other metals Exists in anhydrous and hydrated form. In solution with water, hydrochloric acid is formed.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck.	(1) As for cargo ships	6	D.
		(2) do.	—	—	(2) Packed singly in ;— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do	do	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 51) (10)	
FLUOBORIC ACID (Hydrofluoboric Acid). Free from all but traces of Hydrogen Fluoride, otherwise as for Hydrofluoric Acid. (*Contd.*)		(4) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or lead or other suitable material, effectively closed	10%	50 gal	(4) —	—	(4) On deck only.	(4) Not allowed.	None.	D
		(5) Suitable wooden barrels, lined or coated internally with asphaltum or bitumen or other suitable material, effectively closed	10%	50 gal.	(5) —	—	(5) do.	(5) do.	do.	D.
FLUOSILICIC ACID (Silicofluoric Acid, Hydrosilicofluoric Acid, Hydrofluosilicic Acid, Sand Acid or Hydrofluosilicic Acid).	Fuming liquid, mildly corrosive to steel, lead and glass but has little or no action on paraffin wax, india rubber, gutta percha or bitumen. Irritant to the mucous membranes.	(1) Glass, earthenware, gutta percha, wax or suitable plastic containers of suitable make, effectively closed with suitable stoppers	10%	1 gal	(1) Packed with whiting or other effective non-siliceous absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) do	(1) do	do	D
		(2) Glass or earthenware containers of suitable make, effectively closed with suitable stoppers	10%	11 gal	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	D.
		(3) Suitable sound leaden bottles, effectively closed.	10%	11 gal.	(3) Packed with whiting or other effective non-siliceous absorbent material in wooden cases	—	(3) do	(3) do.	do.	D.
		(4) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or lead or other suitable material, effectively closed.	10%	50 gal.	(4) —	—	(4) do.	(4) do	do	D.
		(5) Suitable wooden barrels, lined or coated internally with asphaltum or bitumen or other suitable material, effectively closed.	10%	50 gal.	(5) —	—	(5) do.	(5) do.	do	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
FORMIC ACID	Fuming liquid with pungent irritating odour. Soluble in water. Corrosive to metals and caustic to the skin. Combustible.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On or under deck.	(1) As for cargo ships.	6	D.
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed.	10%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container	—	(2) do.	(2) do	do	D
		(3) Glass or earthenware containers of suitable make, effectively closed	10%	15 gal.	(3) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material ; the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material	—	(3) do.	(3) do	do	D.
		(4) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or other suitable material, effectively closed	10%	100 gal.	(4) —	—	(4) do	(4) do	do	D
		(5) Suitable unlined stainless steel drums, effectively closed.	10%	100 gal.	(5) —	—	(5) do.	(5) do.	do	D
HYDRAZINE HYDRATE	Corrosive fuming liquid. Strong chemical reducing agent. Explosive and toxic vapour. Caustic to the skin and eyes—vapour irritant to mucous membranes and eyes.	(1) Glass or polythene bottles of suitable make, effectively closed.	5%	5 pints	(1) Packed with suitable protective material in wooden cases. Not more than 6 gal. in each case	—	(1) On deck only, Away from strong acids and strong supporters of combustion.	(1) Not allowed.	3	D
		(2) Glass stoppered glass containers or polythene stoppered polythene containers of suitable make, effectively closed.	5% to be filled with Nitrogen.	10 gal.	(2) Packed singly in wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 33) (10)	
HYDRAZINE HYDRATE *(Contd.)*		(3) Aluminium containers (not less than 99 5% Aluminium) of suitable make, tested by hydraulic pressure to 50lb. per square inch, effectively closed.	5% to be filled with Nitrogen.	50 gal.	(3) —	—	(3) On deck only, Away from strong acids and strong supporters of combustion.	(3) Not allowed.	3	D
		(4) Suitable stainless steel drums tested by hydraulic pressure to 50 lb per square inch, effectively closed.	5% to be filled with Nitrogen.	50 gal.	(4) —	—	(4) do	(4) do.	do.	D.
HYDRIODIC ACID (Hydrogen Iodide Solution)	Liquid Fumes in air Consists of a solution of hydrogen iodide which is a gas at ordinary temperatures. Corrosive to iron and steel and certain other metals, irritant to the skin and mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only Away from Sulphuric Acid and Nitric Acid	(1) Not allowed.	None.	D.
		(2) do.	10%	6 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (c) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D.
HYDROBROMIC ACID (Hydrogen Bromide Solution).	Liquid fuming in air Consisting of a solution of hydrogen bromide which is a gas at ordinary temperatures. Very corrosive to iron and steel and certain other metals. Irritant to the skin and mucous membranes.	(1) do	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do	None.	D.
		(2) do.	10%	10 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (c) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Maximum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 33) (10)	Recommended Label or Stencil (11)
HYDRAZINE HYDRATE (*Contd.*)		(3) Aluminium containers (not less than 99.5% Aluminium) of suitable make, tested by hydraulic pressure to 50lb. per square inch, effectively closed	5% to be filled with Nitrogen.	50 gal.	(3) —	—	(3) On deck only, Away from strong acids and strong supporters of combustion.	(3) Not allowed.	3	D.
		(4) Suitable stainless steel drums tested by hydraulic pressure to 50 lb. per square inch, effectively closed.	5% to be filled with Nitrogen.	50 gal.	(4) —	—	(4) do	(4) do.	do	D.
HYDRIODIC ACID (Hydrogen Iodide Solution).	Liquid. Fumes in air. Consists of a solution of hydrogen iodide which is a gas at ordinary temperatures. Corrosive to iron and steel and certain other metals, irritant to the skin and mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only. Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed	None	D.
		(2) do	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do	D.
HYDROBROMIC ACID (Hydrogen Bromide Solution).	Liquid fuming in air. Consisting of a solution of hydrogen bromide which is a gas at ordinary temperatures. Very corrosive to iron and steel and certain other metals. Irritant to the skin and mucous membranes.	(1) do	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do	(1) do.	None.	D.
		(2) do.	10%	10 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do	D.

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	
HYDROCHLORIC ACID (Muriatic Acid or Spirits of Salts).	Strongly fuming liquid, consisting of a solution in water of hydrogen chloride which is a gas at ordinary temperatures. Very corrosive to most metals evolving hydrogen. Poisonous. Irritant to the skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only. Away from Sulphuric Acid and Nitric Acid	(1) Not allowed.	4	D.
		(2) do.	5%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (d) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D
		(3) Suitable metal drums (e g steel), each lined or coated internally with rubber or other suitable material, effectively closed.	5%	50 gal.	(3) —	—	(3) do	(3) do	do.	D
		(4) Large welded containers approved by the Ministry of Transport and Civil Aviation	5%	—	(4) —	—	(4) do	(4) do	do.	D
HYDROFLUORIC ACID ANHYDROUS. (See Gases, Section 2).										
HYDROFLUORIC ACID SOLUTION (Fluoric Acid, Hydrogen Fluoride Solution)	Fuming liquid consisting of a solution in water of hydrogen fluoride, which is a gas at normal temperatures. Very corrosive. Dissolves glass and certain metals. Has little or no action on lead, gutta percha ebonite, certain plastics paraffin wax or bitumen. Poisonous. Caustic to the skin causing painful sores. Irritant to the mucous membranes.	(1) Sound gutta percha, wax, ebonite or suitable plastic bottles, effectively closed	10%	1 gal	(1) Packed with effective absorbent material in wooden cases. *Kieselguhr or other siliceous material is not allowed.* Not more than 10 gal. in each case	—	(1) On deck only Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed	4	D
		(2) Sound leaden or polythene bottles, effectively closed.	10%	11 gal.	(2) Packed with effective absorbent material in wooden cases or suitable plywood cases or kegs *Kieselguhr or other siliceous material is not allowed.*	—	(2) do	(2) do.	do.	D
		(3) (a) *Hydrofluoric Acid of all strengths* Suitable metal drums (e g steel), each lined or coated internally with lead or other suitable material, effectively closed	10%	50 gal.	(3) (a) —	—	(3) (a) do	(3) (a) do	do.	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Maximum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Label or Stencil Required (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
HYDROFLUORIC ACID SOLUTION (*Contd.*)		(3) (*b*) *Hydrofluoric Acid of not less than 70% w/w* Suitable iron or steel drums, effectively closed. Care should be taken against build-up of pressure. Only drums free from scale should be used.	10%	50 gal	(3) (*b*) —	—	(3) (*b*) On deck only Away from Sulphuric Acid and Nitric Acid.	(3) (*b*) Not allowed.	4	D
ISOPROPYL ACID PHOSPHATE	Liquid, solidifies at about 68°F (20°C.) Mildly corrosive to steel.	PACKING, STOWAGE AND LABELLING AS FOR PHOSPHORIC ACID (page 92) EXCEPT THAT THE CONTAINERS MUST BE HERMETICALLY SEALED								
LEAD SULPHATE (containing more than 3% free acid).	Usually sludge from acid tanks or batteries containing free acid and therefore corrosive to some extent	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases	—	(1) On or under deck Away from food or foodstuffs and living quarters (see def (B), page 5).	(1) As for cargo. ships	4	D
		(2) do.	5% if liquid.	15 gal if liquid.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material.	—	(2) do	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	—	100 gal.	(3) —	—	(3) do.	(3) do.	do.	D.
		(4) Suitable wooden barrels, effectively closed.	—	—	(4) —	—	(4) do	(4) do	do	D
LEAD SULPHATE (containing not more than 3% free acid).	Not dangerous	NO RESTRICTIONS								

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MIXED ACID (when consisting of a mixture of Sulphuric and Nitric Acid).	Very corrosive to metals. In contact with organic substances may cause fire. Gives off vapours, soluble in water with evolution of heat. Reacts with most other corrosive and oxidising agents. Caustic to the skin. Irritates the mucous membranes.	AS FOR "NITRIC ACID"								
NITRIC ACID	Liquid. Fumes in air, very corrosive to most metals. In contact with organic substances may cause fire. Evolves poisonous reddish-brown fumes in contact with certain metals and organic substances. Miscible with water. Powerful oxidising agent. Poisonous. Powerful irritant destroying skin and tissues.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases.* In the case of Nitric Acid not exceeding 70% w/w or 1·420 S G, the absorbent and protective packing material may consist of Kieselguhr, whiting or an intimate mixture of sawdust and whiting, such that there is present in the mixture not less than ⅔ lb. (302 g.) of whiting and not more than 0·6 lb. (272 g.) of sawdust per lb. (453 g.) of Nitric Acid. Any sawdust used must be of sufficient fineness and sufficiently intimately mixed with the whiting to prevent any dangerous segregation of the sawdust. Any additional amount of packing material necessary completely to fill the case when the packing material is well pressed down, must consist of whiting or other non-organic material. For Nitric Acid above 70% w/w or 1·420 S G the absorbent and protective packing material must not consist of unapproved organic material, but may consist of whiting, whiting kieselguhr, kieselguhr or an intimate mixture of coarse exfoliated vermiculite and whiting consisting of 70%–80% whiting by weight and 20%–30% exfoliated vermiculite by weight or other substance approved by the Ministry of Transport and Civil Aviation. The use of a mixture of whiting and sawdust is not permissible. For Nitric Acid of or under 8% w/w or 1·045 S G sawdust alone may be used. Not more than 10 gal. in each case.	—	(1) On deck only. Away from readily inflammable material.	(1) Not allowed.	4	D and F

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* See also Note on following page

(continued overleaf)

SECTION 3—CORROSIVE SUBSTANCES (contd.)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Note.—Regulations for packing Nitric Acid exceeding 8% w/w or 1·045 S.G., in glass or earthenware containers, in cases.

Cases containing Nitric Acid in glass or earthenware containers must, as regards packing 1, conform to the following requirements.—

(1) When two or more containers of a diameter exceeding 3½ inches (90 mm.) are packed in a case, the case must contain an internal partition or partitions, with the object of maintaining the position of each such container in relation to each other such container in the case

(2) The packing material surrounding containers must be well pressed down so as to prevent movement of the containers within the case and to keep each container from contact with each other container

(3) If there is a risk of the timber (of which the case is made) shrinking through drying, steps must be taken to avoid loss of packing material, such steps may include the lining of the case with strong paper

(4) Adequate thickness of packing material must be provided between the bottle or bottles and the sides, top and bottom of the case and (where more than one bottle is packed in a case) also between each bottle and any adjacent bottle This thickness must not be less than —

In the case of any glass or earthenware container not exceeding 3½ inches external diameter (90 mm.)
¾ inch (20 mm.) between any container and the underside of the top of the case and between any container and the upper side of the bottom of the case, and ½ inch (12.5 mm.) between any container and the inside of the case side and (exclusive of thickness of any partition) between any container and any adjacent container.
In the case of any glass or earthenware container exceeding 3½ inches (90 mm.) external diameter and not exceeding 5½ inches (140 mm.) external diameter.
1 inch (25 mm.) between any such container and any part of the inside of the case and (exclusive of the thickness of any partition) between any such container and any adjacent container
In the case of any glass or earthenware container exceeding 5½ inches (140 mm.) external diameter
1½ inches (38 mm.) between any such container and any part of the inside of the case and (exclusive of the thickness of any partition) between any such container and any adjacent container

Stowage.—When any cases so packed are stowed under deck in accordance with Section 9, the cases should be examined as soon as possible after the expiry of 15 minutes after stowage, for any evolution of fumes which would indicate breakage of the glass or earthenware containers

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see § 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NITRIC ACID *(Contd)*		(2) Glass or earthenware containers of suitable make, effectively closed	10%	11 gal.	(2) Packed singly, in — (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper, unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (c) wooden cases The container being packed with protective packing material specified for packing (1) above, well pressed down and enclosed to prevent loss of packing. The thickness of such packing between any part of the container and any part of the inside of the case must not be less than 1½ inches (38 mm.).	—	(2) On deck only. Away from readily inflammable material	(2) Not allowed.	4	D and F
		(3) For acid of not less than 95% strength and S G of not less than 1.5, strong aluminium lined or aluminium drums strengthened by rolling hoops or protected by a steel cage, with efficient screw plugs	10%	—	(3) —	12 cwt.	(3) do.	(3) do.	do.	D and F

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NITRIC ACID (*Contd.*)		(4) For acid of not less than 50% strength and S.G. not less than 1.32 and not more than 95% strength S.G. 1.5, specially approved drums of acid resisting steel, effectively closed.	10%	—	(4) —	12 cwt.	(2) On deck only Away from readily inflammable material.	(4) Not allowed.	4	D and F
PERCHLORIC ACID (not exceeding 72% w/w in solution). *Over 72% is not allowed.*	Liquid. Corrosive. May cause fire in contact with organic matter. Strong supporter of combustion. Very caustic to the skin.	Glass or earthenware containers of suitable make, effectively closed.	10%	5 pints	Packed with kieselguhr or other absorbent non-combustible material in wooden cases. Not more than 10 gal. in each case.	—	On deck only Away from readily inflammable material Away from Sulphuric Acid exceeding 1.405 S.G. and Oleum.	Not allowed.	4	D and F
PHENOL SULPHONIC ACID	Yellowish solid or solution becoming brown on exposure to air. Soluble in water. May corrode iron or steel.	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck	(1) As for cargo ships.	6	D.
		(2) do.	5%	15 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets ; with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the case of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D.
		For carriage on short international voyages only (3) Suitable new steel drums of not less than 16 gauge (0·0625 ins.), effectively closed. *NOTE.* For this packing samples (2-3 ozs.) should be submitted to the Ministry of Transport and Civil Aviation for tests to determine the corrosive effect on steel.	5%	50 gal.	(3) —	—	(3) do.	(3) do.	*do.*	D.

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 55).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOSPHORIC ACID (Orthophosphoric Acid).	Usually exists as a viscous solution. Mildly corrosive to certain metals.	(1) Glass, earthenware or polythene containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	—
		(2) do.	5%	15 gal.	(2) Packed singly in:— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material	—	(2) do.	(2) On deck only.	do	—
		(3) Suitable metal drums (e.g. steel) each lined or coated internally with lead or other suitable material, effectively closed.	5%	—	(3) —	—	(3) do.	(3) As for cargo ships.	do.	—
		(4) Specially constructed large tanks approved by the Ministry of Transport and Civil Aviation.	—	—	(4) —	—	(4) Special stowage conditions will be notified at the time of approval of the containers.	(4) As for cargo ships.	do.	—
PHOSPHORUS PENTACHLORIDE	A volatile solid reacting with water to give hydrochloric acid and phosphoric acid. Corrosive to iron and steel and certain other metals.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On deck only.	(1) Not allowed.	4	D.
		(2) Suitable metal drums or suitable steel drums lined or coated internally with lead or polythene, effectively closed.	—	—	(2) —	—	(2) do.	(2) do.	do.	D.
PHOSPHORUS PENTOXIDE (Phosphoric Acid Anhydrous). (Phosphoric Anhydride)	White powder	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable inorganic protective material in wooden cases.	—	(1) On or under deck.	(1) As for cargo ships.	4	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do	do	—
		(3) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
PHOSPHORUS TRIBROMIDE (Phosphorus Bromide)	Fuming liquid. Penetrating odour. With water decomposes with evolution of heat and formation of Hydrobromic and **Phosphorous Acids**. Corrosive to iron and steel. Irritant to the mucous membranes. Intense reaction with strong alkalis may cause fire.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only	(1) Not allowed	4	D.
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do.	(2) do.	do.	D.
PHOSPHORUS TRICHLORIDE (Phosphorus Chloride)	Fuming liquid with a pungent odour. With water forms Hydrochloric acid and Phosphorous acid. Corrosive to iron and steel. Reacts with organic matter with intense heat. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	D.
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do.	(2) do.	do.	D.
		(3) **For Anhydrous Phosphorus Trichloride only** Suitable unlined metal drums (e.g. steel) of not less than 16 gauge (0·0625 in.) body and 14 gauge (0·0785 in.) ends, effectively closed.	10%	40 gal.	(3) —	—	(3) do.	(2) do.	do.	D.
PHOSPHORYL CHLORIDE (Phosphorus Oxychloride)	Fuming liquid with a pungent odour. Decomposes with water forming Hydrochloric and Phosphoric acids, corrosive to iron and steel and certain other metals. In contact with organic matter produces intense heat and may cause fire. Irritant to the mucous membranes. Supports combustion and may promote ignition.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	D.
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do.	(2) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POTASSIUM HYDROGEN SULPHATE (Acid Potassium Sulphate, Potassium Bisulphate).	Crystalline substance. Soluble in water giving an acid reaction. Solution is corrosive to iron and steel.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck.	(1) As for cargo ships.	7	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do	(3) do.	do.	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases	—	(4) do.	(4) do.	do.	—
		(5) Suitable barrels or cases of wood, effectively closed	—	—	(5) —	—	(5) do.	(5) do.	do.	—
POTASSIUM HYDROXIDE SOLUTION (Potassium Hydrate, Potassium Hydroxide Liquid, Caustic Potash, Potash Liquor)	Liquid. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2¼ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On or under deck. Not in contact with ammonium compounds, aluminium, zinc and alloys thereof	(1) do.	6	D
		(2) do.	5%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or	—	(2) do	(2) do.	do.	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POTASSIUM HYDROXIDE SOLUTION (*Contd*)					(*d*) wooden cases with suitable protective material.					
		(3) Polythene bottles of suitable make, effectively closed	5%	1 gal.	(3) Packed with effective absorbent material in wooden cases Not more than 10 gal. in each case	—	(3) On or under deck. Not in contact with ammonium compounds, aluminium, zinc and alloys thereof.	(3) As for cargo ships	6	D
		(4) Tins or cans of suitable make, effectively closed.	5%.	—	(4) Packed in wooden cases	—	(4) do	(3) do.	do.	D
		(5) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(5) —	—	(5) do.	(5) do	do.	D.
POTASSIUM HYDROXIDE (Solid) (Potassium Hydrate, Caustic Potash)	Solid Generates heat in contact with water Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	7	—
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do	do	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	100 gal.	(4) —	—	(4) do.	(4) do.	do.	—
POTASSIUM HYPOCHLORITE SOLUTION (Bleach Liquor).	Liquid with odour of chlorine	(1) Glass or earthenware containers of suitable make, effectively closed. Vented containers to be used when there is more than 5% available chlorine in the solution	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. (Earthenware containers need only be wickered to the shoulder in lieu of being packed in absorbent material).	—	(1) On or under deck Away from acids.	(1) do	4	—
		(2) Glass or earthenware containers of suitable make, fitted with pressure relief valve or vent.	10%	15 gal	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
Potassium Hypochlorite Solution (*Contd.*)					(c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material					
Potassium Metabisulphite (when in solution forms Potassium Hydrogen Sulphite).	Solid, with an odour of sulphur dioxide. Mildly corrosive to iron and steel when wet.	NOTE THIS SUBSTANCE IS NOT DANGEROUS IN ITSELF BUT SHOULD BE STOWED AWAY FROM ACIDS.								
Potassium Thiocyanate (Potassium Sulphocyanide).	Solid. When wet will corrode metals. When attacked by acids gives rise to Carbonyl Sulphide an inflammable and narcotic gas.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids. Should not be in contact with alkalis, e.g. lime, limewash, caustic soda, etc. Away from food and foodstuffs	(1) As for cargo ships.	6	—
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	—
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) do.	—	(4) do.	(4) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Maximum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 51) (10)	
POTASSIUM THIOCYANATE (Potassium Sulphocyanide) (*Contd.*)		(5) Suitable barrels or cases of wood, effectively closed.	—	—	(5) —	—	(2) On or under deck. Away from acids. Should not be in contact with alkalis, e.g. lime, limewash, caustic soda, etc. Away from food and foodstuffs	(2) As for cargo ships.	6	—
		(6) Suitable drums of fibreboard or plywood, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	—
PROPIONIC ACID	Liquid with a pungent odour. Soluble in water. Slightly corrosive to iron and steel.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	$2\frac{1}{2}$ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) do.	7	—
		(2) do	10%	15 gal	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than $\frac{1}{2}$ inch of packing material , the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	—
		(3) Suitable stainless steel, aluminium - lined iron, aluminium - lined steel, or aluminium drums strengthened by rolling hoops or protected by a steel cage, or drums of other suitable material, effectively closed.	10%	100 gal	(3) —	—	(3) do.	(3) do.	do.	—
		(4) Suitable wooden barrels lined or coated internally with wax or other suitable material, effectively closed.	10%	50 gal.	(4) —	—	(4) do.	(4) do.	do.	—

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SILICON TETRACHLORIDE (Silicon Chloride)	Liquid. Fumes readily in air. With water it decomposes to form Hydrochloric acid, which is corrosive to iron and steel and certain other metals. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	$2\frac{1}{2}$ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) As for cargo ships	None.	D.
		(2) do.	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than 1 inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material	—	(2) do	(2) Not allowed.	do.	D
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	50 gal.	(3) —	—	(3) do	(3) do.	do.	D.
SLUDGE OR SPENT ACID (not containing Nitric Acid or Nitrous Acid) (Acid residues usually resulting from various processes in chemical manufacture or oil refining. If containing Nitric Acid or Nitrous Acid the recommendations covering Mixed Acids apply).	Very corrosive liquid similar in properties to sulphuric acid.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	$2\frac{1}{2}$ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) Not allowed.	4	D
		(2) do.	5%	11 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than $\frac{1}{2}$ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	5%	—	(3) —	—	(3) do	(3) do.	do.	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM HYDROGEN SULPHATE (Sodium Sulphate Acid, Nitre Cake, Sodium Bisulphate containing more than 3% free acid).	Solid. Corrosive when wet. May contain small amounts of sulphuric acid.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck	(1) As for cargo ships.	7	—
		(2) do.	—	—	(2) Packed singly in— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do	do.	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases	—	(4) do.	(4) do.	do	—
		(5) Suitable metal drums (e.g. steel), effectively closed	—	—	(5) —	—	(5) do.	(5) do.	do.	—
		(6) Suitable barrels or cases of wood, effectively closed.	—	—	(6) —	—	(6) do	(6) do	do	—
Note.—Sodium sulphate, glauber salts and commercial saltcake, neutral or containing not more than 3% free acid, are non-dangerous and may be carried without restriction.										
SODIUM HYDROGEN SULPHITE SOLUTION (Sodium Bisulphite Solution).	Corrosive, with a pungent odour.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from acids.	(1) As for cargo ships.	6	D.
		(2) do.	10%	15 gal.	(2) Packed singly in— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do.	(2) do.	do.	D.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
SODIUM HYDROGEN SULPHITE SOLUTION (Sodium Bisulphite Solution) (*Contd.*)					(*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material.					
		(3) Suitable wooden barrels, effectively closed.	—	—	(3) —	—	(3) On or under deck. Away from acids.	(1) As for cargo ships.	6	D.
SODIUM HYDROXIDE (Solid) (Sodium Hydrate, Caustic Soda).	Solid. Generates heat in contact with water. Very soluble in water. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Not in contact with ammonium compounds, aluminium, zinc or alloys thereof.	(1) do.	7	—
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container , or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do.	(3) do.	do.	—
		(4) Tins or cans of suitable make, effectively closed.	—	2 lb.	(4) Packed in strong fibreboard containers Not more than 56 lb per container.	—	(4) do	(4) do.	do.	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(3) do.	(5) do	do.	—
SODIUM HYDROXIDE SOLUTION (Caustic Soda Liquor, Sodium Hydrate, Lye).	Liquid. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) do	(1) do.	6	D.
		(2) do.	5%	15 gal.	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or	—	(2) do.	(2) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 330)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM HYDROXIDE SOLUTION (Caustic Soda Liquor, Sodium Hydrate, Lye) (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.					
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) On or under deck. Not in contact with ammonium compounds, aluminium, zinc or alloys thereof.	(3) As for cargo ships.	6	D.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	100 gal.	(4) —	—	(4) do.	(4) do.	do	D.
SODIUM HYPOCHLORITE	Liquid with odour of chlorine.	(1) Glass or earthenware containers of suitable make, effectively closed. Vented containers to be used when there is more than 5% available chlorine in the solution.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases or fibreboard cases approved by the Ministry of Transport and Civil Aviation. (Earthenware containers need only to be wickered to the shoulder in lieu of absorbent material).	—	(1) On or under deck.	(1) As for cargo ships	4	—
		(2) Glass or earthenware containers of suitable make, fitted with pressure relief valve or vent.	10%	15 gal.	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
SODIUM METABISULPHITE (Sodium Bisulphite Powder).	Solid with an odour of sulphur dioxide. Mildly corrosive when wet. When in solution forms sodium hydrogen sulphate (sodium bisulphate).	NOTE THIS SUBSTANCE IS NOT DANGEROUS IN ITSELF BUT SHOULD BE STOWED AWAY FROM ACIDS.								
SODIUM THIOCYANATE (Sodium Sulphocyanide).	Solid. When wet will corrode metals. When attacked by acids, gives rise to Carbonyl Sulphide, an inflammable and narcotic gas.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids. Should not be in contact with alkalis, e.g. lime, limewash, caustic soda, etc. Not in the same compartment as food or foodstuffs.	(1) As for cargo ships.	6	—
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do	(3) do	do.	—
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) do	—	(4) do.	(4) do.	do	—
		(5) Suitable barrels or cases of wood or suitable fibreboard drums effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SPENT MIXED ACIDS (Spent sulphuric and nitric acid and / or nitrous acid mixture. Waste acid resulting from various chemical processes). (See MIXED ACIDS.)										
STANNIC CHLORIDE, ANHYDROUS (Tin Tetrachloride, Tin Chloride, fuming)	Fuming liquid. Corrosive to metals With water evolves much heat and forms hydrochloric acid Vapours are caustic to the skin and irritating to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed. (2) Suitable metal drums (e g steel), effectively closed	10% 10%	2½ gal 100 gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case. (2) —	— —	(1) On deck only. (2) do.	(1) Not allowed. (2) do	4 do	D D
SULPHUR CHLORIDES (Sulphur di-chloride and Sulphur Monochloride).	Fuming liquids with penetrating odour Decomposed by water with formation of sulphur and giving a strong acid solution, corrodes iron and steel and certain other metals Irritant to the mucous membranes.	(1) Glass or earthen ware containers of suitable make, effectively closed. (2) Suitable metal drums (e.g. steel), effectively closed.	10% 10%	2½ gal. —	(1) Packed with effective absorbent material in wooden cases Not more than 10 gal. in each case. (2) —	— 2 cwt.	(1) On deck only. (2) do	(1) Not allowed. (2) do	4 do	D D.
SULPHURIC ACID exceeding specific gravity 1·405 (Oil of Vitriol) (not including Oleum and "Nordhausen" Acid)	Oily, corrosive liquid. Has a great affinity for water, evolving much heat. Chars wool, textiles, cotton and most organic substances, but will not cause fire under ordinary conditions. Solution of the acid in water is very corrosive to iron and steel and certain other metals. Reacts violently with chlorates and certain other supporters of combustion. Is dangerous in contact with certain other acids. Causes severe burns.	(1) Glass or earthenware containers of suitable make, effectively closed. (2) do	5% 5%	2½ gal. 15 gal	(1) Packed with whiting, whiting/sawdust mixture or other effective absorbent material in wooden cases Not more than 10 gal. in each case. (2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material.	— —	(1) do. (2) do.	(1) do. (2) do	do. do	D. D.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 23) (10)	Recommended Label or Stencil (11)
SULPHURIC ACID (*Contd.*)		(3) For sulphuric acid of specific gravity not less than 1·84, steel drums approved by the Ministry of Transport and Civil Aviation, effectively closed.	5%	14 cwt.	(3) —	—	(3) On or under deck. If on deck, the gross weight of the drums must not exceed 6 cwt. If under deck, the drums must be effectively embedded in layers of lime-stone chippings or slack coal of a kind not liable to spontaneous combustion. The bottom layer of chippings or coal should not be less than 1 foot thick for drums up to 10 cwt. and 2 feet thick for drums over 10 and up to 14 cwt. Not more than 4 tiers of drums may be stowed in this way. Any chippings or coal that have been wetted with sulphuric acid should be removed as soon as possible and should not afterwards be used. In special circumstances large containers may be stowed on deck under special conditions approved by the Ministry of Transport and Civil Aviation.	(3) In special circumstances may be stowed on deck under special conditions approved by the Ministry of Transport and Civil Aviation.	4	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SULPHURIC ACID of specific gravity not exceeding 1·405	Very corrosive to iron and steel and certain other metals. May react violently with chlorates and certain other supporters of combustion. Is dangerous in contact with certain other acids. Causes severe burns	(1) Glass, earthenware or polythene containers of suitable make, effectively closed. (2) do.	5% 5%	2½ gal 15 gal.	(1) Packed with whiting, whiting/sawdust mixture or other effective absorbent material in wooden cases. Not more than 10 gal. in each case. (2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material.	— —	(1) On or under deck. (2) On deck only.	(1) As for cargo ships. (2) do.	4 do	D. D.
	In the case of voyages within Home Trade Limits as defined in Section 742 of the Merchant Shipping Act, 1894, the supplementary case, crate or hamper referred to in packing 2 (c) above may be omitted.									
SULPHURIC ACID, fuming (Oleum or "Nordhausen" Acid)	A solution of sulphur trioxide in concentrated sulphuric acid. Fumes in the air. Reacts violently with water evolving much heat. Will char most organic matter. Dangerous in contact with supporters of combustion and other acids. Very corrosive to metals in the presence of water. The fumes are caustic and irritant to the skin and mucous membranes. Will cause severe burns	(1) Glass or earthenware containers of suitable make, effectively closed. (2) Steel drums approved by the Ministry of Transport and Civil Aviation for Sulphuric Acid of specific gravity not less than 1·84, effectively closed	5% 5%	2½ gal. 14 cwt.	(1) Packed with whiting or other effective non-organic absorbent material in wooden cases. Not more than 10 gal in each case. (2) —	— —	(1) As for Sulphuric Acid (1). S.G. over 1·405. (2) As for Sulphuric Acid (3). S.G. over 1·405	(1) Not allowed. (2) do.	do. do.	D. D.
SULPHUROUS ACID (Sulphur Dioxide Solution)	Evolves irritating and suffocating gas.	(1) Glass or earthenware containers of suitable make, effectively closed (2) do	5% 5%	2½ gal 15 gal.	(1) Packed with sawdust or other effective absorbent material in wooden cases. Not more than 10 gal. in each case. (2) Packed singly in — (a) wicker hampers with wicker bonnets; or	— —	(1) On or under deck. (2) do.	(1) As for cargo ships. (2) do.*	6 do.	— —

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SULPHUROUS ACID (Contd.)					(b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material.					
		(3) Suitable wooden barrels, effectively closed.	5%	—	(3) —	—	(3) On or under deck.	(3) As for cargo ships.	6	—
STABILIZED LIQUID SULPHUR TRIOXIDE	Liquid at 63°F. (17°C.) boiling point 113°F. (45°C.). Ice-like solid below 63°F. (17°C.). Fumes in the air. Similar in chemical properties to Oleum but is more violent in reaction with water and may ignite organic matter upon contact.	(1) Glass ampoules of suitable make, hermetically sealed, and sufficiently strong to withstand an internal pressure of at least 40 lb./sq. in.	10%	2 lb.	(1) Packed in kieselguhr or vermiculite in tins in outer wooden cases. Not more than 6 glass ampoules in tins in each case.	—	(1) On deck only.	(1) Not allowed.	4	D
		(2) Strongly made and perfectly tight drums of gauge 12 (·0994 ins.) body and gauge 10 (·1250 ins.) ends fitted with rolling hoops and reinforced ends. For drums below 15 gallons the body may be 14 gauge and the ends 12 gauge. Test pressure 20 lb./sq. in. For tropical climates the ends of the drums should be dished or fitted with stiffeners and tested by hydraulic pressure to 40 lb. sq./in.	10%	7 cwt.	—	—	(2) On or under deck. If under deck, the drums must be effectively embedded in layers of limestone chippings. The bottom layer of chippings should not be less than 1 foot thick. Not more than 4 tiers of drums may be stowed in this way. Any chippings that have been wetted with liquid sulphur trioxide should be removed as soon as possible and should not afterwards be used.	(2) do.	4	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SULPHURYL CHLORIDE	Liquid with pungent odour. Decomposed by water with the formation of both Hydrochloric and Sulphuric acids, which are corrosive to iron and steel. Caustic to the skin. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) Not allowed.	4	D.
		(2) do.	10%	6 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (c) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	—	(3) —	2 cwt.	(3) do.	(3) do.	do.	D
THIONYL CHLORIDE	A pungent liquid. Decomposed by water into Sulphurous and Hydrochloric acids, which are corrosive to iron and steel. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	D
		(2) do.	10%	10 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (c) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	—	(3) —	2 cwt.	(3) do.	(3) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
TITANIUM TETRACHLORIDE	Liquid. In the presence of moist air forms a dense white cloud or vapour Decomposed by water with the formation of Hydrochloric acid, which is very corrosive to iron and steel and certain other metals. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only.	(1) Not allowed.	4	D.
		(2) do.	10%	6 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (c) wooden cases with suitable protective material	—	(2) do.	(2) do	do	D.
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	10 gal.	(3) —	—	(3) do	(3) do.	do	D.
		(4) Steel drums approved by the Ministry of Transport and Civil Aviation.	10%	50 gal.	(4) —	—	(4) do.	(4) do.	do	D
		(5) Specially strong steel containers.	—	—	(5) Packed in wooden cases.	—	(5) On or under deck.	(5) do.	do.	D.
ZINC CHLORIDE SOLUTION (Killed Spirit, Tinning Flux).	Corrosive. Burns the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	D.
		(2) do.	5%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (d) wooden cases with suitable protective material.	—	(2) do.	(2) do.	do	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZINC CHLORIDE SOLUTION (Killed Spirit, Tinning Flux). (*Contd.*)		(3) *When neutral.* Tins or cans of suitable make, effectively closed.	5%	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck.	(3) As for cargo ships.	6	D.
		(4) *When neutral.* Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(4) —	—	(4) do.	(4) do.	do.	D.
ZINC CHLORIDE (SOLID) (Tinning Flux)	Solid. Readily absorbs water and becomes liquid. Corrosive when wet. Burns the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) do.	do.	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do.	(3) do	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do	do	—

SECTION 4

(Category (iv) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952

Poisonous Substances

GENERAL NOTES

1. General

This Section includes substances which are dangerous by reason of the poisonous or deleterious effect which they have on human beings when they find their way into the body either by being breathed, by being taken through the mouth, or by absorption through the skin

Only substances whose primary danger is poisoning are included in this Section Poisonous substances which have other more dangerous characteristics are included in the Sections dealing with such characteristics. The poisonous compressed gases are also excluded from this Section and will be found in Section 2.

This Section is divided into two groups . (A) substances which give off a poisonous gas or vapour, and (B) other poisonous substances With substances in Group (A), which are generally liquids, danger arises primarily from breathing the gas or vapour ; substances in Group (B) become dangerous when taken through the mouth and may be either liquids or solids. Certain substances in both groups are also dangerous if absorbed through the skin In general the precautions required will be similar for the two groups.

The tables also set out any subsidiary hazards which may result from damage to a container or containers

2. Packing

The main precautions required are to prevent leakage of the substance or its gas or vapour during the normal usage incidental to transport In the case of liquids, an adequate air space must be allowed in the containers for thermal expansion ; the minimum air space required is shown in the Table.

Packing material may be required —

(i) for protective purposes only, or

(ii) for protective purposes and also for the absorption of liquid in the event of breakage

In most cases it may be corrugated paper, sawdust, woodwool or similar material, but in certain special cases as specified in the Tables kieselguhr or other approved substances must be used for packing purposes. Where "effective absorbent material" is specified it must comply with the definition of "effective" on pages 5 and 6 and in addition, when two or more containers of a diameter exceeding 3½ inches (90 mm.) are packed in a case, the case must contain an internal partition or partitions, with the object of maintaining the position of each such container in relation to each other such container in the case. All packages must conform to the general principles set out in the General Recommendations (pages 5 and 6)

Where no limit of weight or capacity is specified in the Tables there is no restriction on the weight or capacity of the packages.

3. Stowage

Generally, substances in this section should be stowed in such a manner as to avoid all risk of contaminating food or foodstuffs

For liquids giving off poisonous gas or vapour, stowage in a well ventilated space is desirable Unless otherwise specified, these substances may be carried on or under deck. Any special conditions are shown in the Table.

After discharge, spaces used for the transport of poisonous substances should be properly cleaned and examined before being used for other cargoes, especially food and foodstuffs

4. Empty Containers

Containers which have lately carried poisonous substances are liable to present a danger, and regard should be paid to the hazards attaching to the poisonous substance last carried.

5. This Section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities.

TABLE A—SUBSTANCES GIVING OFF POISONOUS GAS OR VAPOUR

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
ACETONE CYANOHYDRIN effectively stabilised.	Colourless to amber coloured liquid. Miscible with water. Flashpoint about 165° F (74° C) Stable in the presence of a trace of mineral acid, e.g. sulphuric acid Poisonous, absorption through the skin or by inhalation of the vapour is dangerous.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases Not more than 10 gal. in each case.	—	(1) On deck only. Away from alkalis, nitric acid, combustible cargo, food and foodstuffs	(1) Not allowed	None.	C.
		(2) Suitable steel drums, effectively closed.	5%	50 gal.	(2) —	—	(2) do.	(2) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIA SOLUTIONS	Liquid. Pungent odour. Dangerous irritant. Corrodes copper and copper alloys such as brass. No effect on iron or steel.									
Specific gravity 0·959 and over		No special precautions.	—	—	No special precautions.	—	No special precautions.	No special precautions	6	—
Specific gravity 0·892 to 0·958		(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck Away from living quarters (see definition (B), page 5).	(1) As for cargo ships.	do	—
		(2) do.	10%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with protective material.	—	(2) do	(2) do.	do.	—
		(3) Suitable steel drums or steel barrels hydraulically tested to 20 lb. per square inch for temperate climates and 40 lb. per square inch for tropical climates, at which pressures they shall show no signs of rupture or leakage.	10%	100 gal.	(3) —	—	(3) do.	(3) do.	do.	—
Specific gravity 0·880 to 0·891.		(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(3) do.	do.	—
		(2) do.	10%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets; or	—	(2) do	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
AMMONIA SOLUTIONS Specific gravity 0·880 to 0·891 (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with protective material					
		(3) Suitable steel drums or steel barrels hydraulically tested to 40 lb per square inch for temperate climates and 66 lb per square inch for tropical climates, at which pressures they shall show no signs of rupture or leakage.	10%	100 gal.	(3) —	—	(3) On or under deck. Away from living quarters (see definition (B), see page 5)	(3) As for cargo ships.	6	—
ANILINE (Phenylamine, Amino-benzene, Aniline Oil)	Oily liquid. Poisonous by absorption of the liquid through the skin and by inhalation of its vapour. Leakage will stain surrounding goods	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Not in the same compartment as food or foodstuffs. Away from living quarters (see definition (A), page 5)	(1) On deck only.	do.	C.
		(2) Tins or cans of suitable make, effectively closed	5%	—	(2) do.	—	(2) do	(2) do	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed	5%	100 gal.	(3) —	—	(3) do	(3) As for cargo ships.	do.	C.
ARSENIC BROMIDE	Crystals which become liquid by absorption of moisture from the air. Melts at about 86° F. Decomposed by water. Vapours are poisonous	Glass or earthenware containers of suitable make, effectively closed.	—	—	Packed with suitable protective material in wooden cases.	—	On deck only	do.	None.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
ARSENIC TRICHLORIDE (Arsenic Chloride, Arsenious Chloride, Arsenous Chloride, Butter of Arsenic, Caustic Arsenic Chloride, Caustic Oil of Arsenic, or Fuming Liquid Arsenic)	Oily liquid. Will become corrosive if exposed to moisture. Vapours are poisonous.	Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	Packed with effective absorbent material in wooden cases not more more than 10 gal in each case.	—	On deck only	As for cargo ships.	None.	C.
BROMINE, and Solutions of **BROMINE**.	Liquid. Burns skin. Fumes extremely irritating to the respiratory organs and the eyes Corrosive.	Glass or earthenware containers of suitable make, effectively closed.	10%	5 pints.	Packed in substantial wooden cases Not more than 6 gal. in each case, each container completely surrounded by kieselguhr, exfoliated vermiculite or an intimate mixture of equal parts by weight of whiting and sawdust.	—	do.	Not allowed.	4	C.
CARBON TETRACHLORIDE (Tetrachloromethane, Perchloromethane).	Liquid. Heavy vapour which has anaesthetic properties Poisonous. Non-inflammable.	(1) No restriction on this substance when contained in capsules packed in bottles in wooden cases. When so packed is not considered to be dangerous.								
		(2) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal	(2) Packed with effective absorbent material in wooden cases Not more than 10 gal in each case.	—	(2) On or under deck Away from living quarters (see definition (A), page 5), metallic powders and alkali metals.	(2) As for cargo ships.	None.	C.
		(3) do	10%	15 gal	(3) Packed singly in — (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (d) wooden cases with suitable protective material	—	(3) do	(3) On deck only.	do.	C.
		(4) Tins or cans of suitable make, effectively closed	10%	—	(4) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(4) do.	(4) As for cargo ships.	do.	C.
		(5) Suitable metal drums (e.g. steel), effectively closed.	10%	100 gal.	(5) —	—	(5) do.	(5) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHLOROBROMO-METHANE	PACKING, STOWAGE AND LABELLING AS FOR CARBON TETRACHLORIDE (PAGE 113)									
CHLOROFORM (Trichloromethane, Formyl Trichloride, or Methenyl Trichloride),	Volatile liquid giving off anæsthetic vapour. Not readily inflammable.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from living quarters (see definition (A), page 5).	(1) As for cargo ships.	None.	—
		(2) do	10%	15 gal.	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material.	—	(2) do.	(2) On deck only	do.	—
		(3) Tins or cans of suitable make, effectively closed.	10%	—	(3) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(3) do.	(3) As for cargo ships.	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	10%	100 gal.	(4) —	—	(4) do.	(4) do.	do.	—
CHLOROPICRIN (Trichloronitromethane)	Slightly oily liquid. Vapour very irritant and poisonous.	(1) Glass bottles of suitable make, stoppered and luted.	5%	5 pints	(1) Packed with effective absorbent material in tins in wooden cases. Not more than 6 gal. in each case.	—	(1) On deck only.	(1) Not allowed.	do.	C.
		(2) Suitable metal drums (e.g. steel), effectively closed.	5%	50 gal.	(2) —	—	(2) do.	(2) do.	do.	C.
o-DICHLOROBENZENE	Volatile heavy liquid. Aromatic odour. Insoluble in water. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from food, foodstuffs and living quarters (see definition (A), page 5).	(1) As for cargo ships.	7	—
		(2) Tins or cans of suitable make, effectively closed.	5%	—	(2) do.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3 —	—	(3) do.	(3) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
p-DICHLOROBENZENE (*Contd.*)	Crystalline solid Penetrating odour. Insoluble in water. Volatile. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food, foodstuffs and living quarters (see definition (A) page 5).	(1) As for cargo ships.	7	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases.	—	(2) do.	(2) do.	do	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—
		(4) Suitable barrels or cases of wood, effectively closed.	—	—	(4) —	—	(4) do	(4) do	do	—
DICHLOROMETHANE (Methylene Chloride).	Volatile liquid giving off anæsthetic vapour. Not readily inflammable.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from living quarters (see definition (A), page 5).	(1) do.	None.	—
		(2) Tins or cans of suitable make, effectively closed.	10%	—	(2) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	100 gal.	(3) —	—	(3) do.	(3) do.	do.	—
DIETHYL SULPHATE (Ethyl Sulphate).	Liquid. Vapour irritant and poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	5 pints	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only	(1) As for cargo ships.	None.	C.
		(2) do.	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	50 gal.	(3) —	—	(3) do.	(3) do.	do.	C.
DIMETHYL SULPHATE (Methyl Sulphate).	Liquid immiscible with water. Very poisonous and vapours are poisonous when inhaled. Caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	5 pints	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do	(1) do	do.	C.
		(2) Suitable metal drums (e.g. steel), effectively closed.	10%	50 gal.	(2) —	—	(2) do.	(2) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
HYDROCYANIC ACID (Solutions). Solutions not exceeding 4% hydrocyanic acid by weight.		Glass containers of suitable make, effectively closed.	10%	5 pints	Packed with effective absorbent material in wooden cases. Not more than 5 gal in each case.	—	On deck only, in an easily accessible space.	As for cargo ships.	None.	C.
HYDROGEN CYANIDE ANHYDROUS (Hydrocyanic Acid, Prussic Acid)	Intensely poisonous even at minute dilution in air Almond odour Exists as a liquid below 80° F Vapours are inflammable. Decomposes and polymerises in presence of iron and alkali unless a stabiliser is added.	The carriage by sea of unstabilised anhydrous hydrocyanic acid is prohibited. In all cases the hydrocyanic acid must be effectively stabilised by the addition of a sufficient quantity of efficient stabiliser The particular acid or acid tester must be approved by the Ministry of Transport and Civil Aviation, and shippers must furnish a certificate (for the confidential use of the Ministry of Transport and Civil Aviation), specifying the stabiliser and the quantity used.								
		(1) Seamless steel cylinders (see Gases Section, page 54).								
		(2) Absorbed in a suitable porous material and contained in stout tin containers, hermetically sealed	—	2½ lb.	(2) Tins protected with suitable packing material packed in wooden cases *Not more than 36 lb of acid in each case.*	—	(2) On deck only, in an easily accessible space.	(2) Not allowed	None.	C.
		(3) Glass bottles, made from glass as free as possible from surface alkali, effectively closed.	10%	1 lb	(3) Bottles to be wrapped in packing material and packed in tin cases with sufficient slaked lime to neutralise the whole of the contents of the bottles in the event of breakage. *Not more than 20 lb of liquid in each case*	—	(3) do.	(3) do.	do.	C.
METHYL BROMIDE (Bromomethane)	Volatile liquid at normal temperatures Non-inflammable Very faint chloroform-like odour Heavier than air Poisonous at low concentrations and effects on personnel may be delayed in action.	(1) Glass containers of suitable make, hermetically sealed.	Filling ratio (see Gases Section) 1 45 temperate climate; 1 39 tropical climate.	22 c.c.	(1) Packed with effective absorbent material in wooden cases Not more than 56 lb in each case.	—	(1) On or under deck Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food and foodstuffs. If under deck, mechanical ventilation to be provided.	(1) do.	do.	C.
		(2) Tins or cans of suitable make, hermetically sealed	do.	1 lb.	(2) Packed with suitable protective material in wooden cases. Not more than 56 lb in each case.	—	(2) do.	(2) do.	do.	C.
MOTOR FUEL ANTI-KNOCK COMPOUNDS Containing tetraethyl lead.	Mixtures of tetraethyl lead, ethylene dibromide and ethylene dichloride. Insoluble in water Absorption through the skin or inhalation of vapour is dangerous.	(1) Glass containers of suitable make, stoppered and luted.	5%	5 pints	(1) Packed with effective absorbent material in tins in cases. Not more than 6 gal in each case.	—	(1) On or under deck Away from food, foodstuffs and living quarters (see definition (A), page 5)	(1) As for cargo ships	6	C.
		(2) Tins or cans of suitable make, effectively closed.	5%	5 pints	(2) Packed in outer metal containers in wooden cases. Not more than 6 gal. in each case.	—	(2) do.	(2) do.	do.	C.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MOTOR FUEL ANTI-KNOCK COMPOUNDS Containing tetraethyl lead. (*Contd.*)		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	50 gal.	(3) —	—	(3) On or under deck. Away from food, foodstuffs and living quarters (see definition (A), page 5)	(3) Not allowed.	6	C.
		(4) Specially constructed large tanks approved by the Ministry of Transport and Civil Aviation.	—	—	(4) —	—	(4) Special stowage conditions will be notified at the time of approval of the containers	(4) do.	do	C.
NITROBENZENE (Nitrobenzol, Mirbane oil).	Oily liquid, giving off inflammable poisonous vapour. Fl. Pt. 190° F. Melting point 42° F.	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from food, foodstuffs and living quarters (see definition (A), page 5).	(1) As for cargo ships	4	—
		(2) Tins or cans of suitable make, effectively closed.	5%	—	(2) do.	—	(2) do	(2) do.	do	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do.	do	—
PARATHION (Diethyl-p-nitrophenyl thiophosphate) Parathion or Liquid containing Parathion	Poisonous Liquid. Should not be inhaled or allowed to come into contact with the skin.	(1) Glass bottles of suitable make, effectively closed	5%	4 oz.	(1) Packed with effective absorbent material in wooden cases Not more than 6 gal. in each case.	—	(1) do.	(1) do.	7	C.
		(2) Tins or cans of suitable make, effectively closed.	5%	2½ pts.	(2) Packed with effective absorbent material in wooden cases. Not more than 12 gal. in each case.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do.	do	C.
Wettable Powders or Dusts containing Parathion.	Poisonous Powders Should not be inhaled or allowed to come into contact with the skin.	Suitable metal drums, effectively closed.	—	—	—	—	do	do.	do.	C.
PENTACHLOROETHANE	Liquid. Poisonous. Non-inflammable. Evolves mildly poisonous vapour	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do	(1) do.	None.	—
		(2) Tins or cans of suitable make, effectively closed.	5%	—	(2) do.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 83). (10)	Recommended Label or Stencil (11)
TETRACHLORO-ETHANE (Acetylene Tetrachloride).	Liquid. Ether-like odour. Non-inflammable. Evolves mildly poisonous vapour.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from food, foodstuffs and living quarters. (See definition (A), page 5).	(1) As for cargo ships.	None.	—
		(2) Tins or cans of suitable make, effectively closed	5%	—	(2) do.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do	do	—
TETRACHLORO-ETHYLENE (Perchloroethylene).	Liquid. Non-inflammable. Ether-like odour. Evolves mildly poisonous vapour.	(1) No restrictions on this substance when contained in capsules packed in bottles in wooden cases. When so packed is not considered to be dangerous.								
		(2) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(2) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(2) On or under deck. Away from food, foodstuffs and living quarters (see definition (A), page 5).	(2) As for cargo. ships.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	5%	—	(3) do.	—	(3) do.	(3) do	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(4) —	—	(4) do.	(4) do.	do	—
TETRAETHYL LEAD (Lead Tetraethyl).	Poisonous volatile liquid. Danger by absorption of liquid through the skin and by inhalation of vapour.	(1) Glass containers of suitable make, stoppered and luted.	10%	5 pints	(1) Packed with effective absorbent material in tins in cases. Not more than 6 gal. in each case.	2 cwt	(1) On or under deck. Away from food, foodstuffs and living quarters (see definition (A) page 5).	(1) As for cargo ships.	6	C.
		(2) Tins or cans of suitable make, effectively closed.	10%	5 pints	(2) Packed in outer metal containers in wooden cases. Not more than 6 gal. in each case.	—	(2) do.	(2) do.	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	50 gal.	(3) —	—	(3) do	(3) Not allowed.	do	C.
TRICHLORO-ETHYLENE	Heavy liquid. Poisonous. Non-inflammable. Chloroform-like odour. Evolves mildly poisonous vapour.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) As for cargo ships.	None.	—
		(2) Tins or cans of suitable make, effectively closed.	5%	—	(2) do.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do.	do.	—

NO RESTRICTIONS ON THIS SUBSTANCE WHEN CONTAINED IN AMPOULES PACKED IN WOODEN CASES. WHEN SO PACKED IS NOT CONSIDERED TO BE DANGEROUS.

SECTION 4 — TABLE B — POISONOUS SUBSTANCES OTHER THAN THOSE GIVING OFF POISONOUS GASES OR VAPOURS

These poisons do not normally constitute a risk to the ship or those on board

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
ALKALOIDS, POISONOUS, and their salts. NOTE: For NICOTINE and NICOTINE COMPOUNDS see separate entry.	Generally solids. Poisonous if taken internally. Danger in breathing air laden with fine dust.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	C.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) do.	—	(2) do.	(2) do	do.	C.
ANILINE HYDROCHLORIDE (Aniline Chloride, Aniline Salt).	Solid. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from alkalis, food and foodstuffs.	(1) As for cargo ships.	7	C.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) do.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) Suitable sound hardwood casks, effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	C.
		If the salt is dry :— (5) Suitable wooden barrels, lined or coated internally with paper or other suitable material, effectively closed, or suitable fibreboard drums effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	C.
		(6) Double-walled paper bags.	—	—	(6) Tightly packed in lined wooden cases.	—	(6) do.	(6) do.	do.	C.
ANTIMONY COMPOUNDS, ANTIMONY TRI CHLORIDE. (See Corrosives Section, page 76).										

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Other Antimony Compounds, including :— ANTIMONY LACTATE, ANTIMONYL POTASSIUM TARTRATE (TARTAR EMETIC), ANTIMONY SULPHIDE	Solid.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	—
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—
		If the salt is dry :— (4) Suitable wooden barrels or cases, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—
ARSENIC AND ITS COMPOUNDS— ARSENIC METAL	Brittle metal-like crystalline mass. Odourless, insoluble in water.	In any suitable container.	—	—	—	—	do.	do.	do.	C.
ARSENIC ACID	Liquid or solid. Liquid has considerable corrosive effect on iron and steel. In solid form it is a crystalline powdery material not inflammable or corrosive but readily absorbs moisture from the air. Dangerous in form of vapour or fine powder taken through the respiratory or digestive system.	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid.	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases If liquid, not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	C.
		(2) do.	5% if liquid.	15 gal. if liquid.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (c) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(3) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal. in each case.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal. if liquid.	(4) —	—	(4) do.	(4) do.	do	C.

Note :- Antimony Sulphide (Stibnite), grey crystalline masses or greyish black powder, when dry, may be packed in any suitable container. Stowage should be in a dry place away from strong acids, strong supporters of combustion and food and foodstuffs.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ARSENIC AND ITS COMPOUNDS (*Contd.*) ARSENIC PENTOXIDE	Crystalline material, will become liquid by absorbing moisture from the air forming arsenic acid which is corrosive. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships.	None.	C
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets , or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material , the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	C.
ARSENIC TRIOXIDE (White Arsenic).	Powder. Care should be taken not to breathe air laden with the powder.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do.	C.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container , or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper , or (*d*) wooden cases with suitable protective material.	—	(2) do	(2) do	do	C.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ARSENIC AND ITS COMPOUNDS (*Contd.*) ARSENIC TRIOXIDE (White Arsenic) (*Contd.*)		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships.	None.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	C.
		(5) Suitable wooden barrels, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	C.
		(6) Double-walled paper bags, securely closed.	—	—	(6) Packed tightly in outer cases.	—	(6) do.	(6) do.	do.	C.
ARSENICAL DUST (Arsenical Flue Dust).	A fine powder Poisonous by inhalation.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do.	C.
		(2) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(2) —	—	(2) do.	(2) do.	do.	C.
CACODYLIC ACID (Dimethylarsenic Acid), including Sodium Cacodylate (Sodium Dimethylarsenate).	Solid. Odourless crystals, which become liquid by absorbing moisture from the air Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do.	C.
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 51) (10)	
ARSENIC AND ITS COMPOUNDS (Contd.)										
CALCIUM ARSENATE.	Powder, slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships.	None.	C.
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do	do.	C.
		(4) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(4) —	—	(4) do	(4) do	do.	C.
		(5) Double-walled paper bags, securely closed.	—	—	(5) Packed tightly in outer cases.	—	(5) do	(5) do	do.	C.
LEAD ARSENATE	Crystalline powder Highly poisonous. Decomposes on heating.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases or in fibreboard cases approved by the Ministry of Transport and Civil Aviation	—	(1) do	(1) do.	do	C.
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do	(2) do.	do.	C.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ARSENIC AND ITS COMPOUNDS (*Contd.*) LEAD ARSENATE (*Contd.*)					(*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships	None	C.
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do	(4) do	do	C
		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	C
		(6) Double-walled paper bags, securely closed.	—	—	(6) Packed tightly in outer cases.	—	(6) do	(6) do.	do	C.
SHEEP DIPS, ARSENICAL	May be in liquid, paste, solid or powder form.	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal. in each case.	—	(1) do	(1) do	do	C.
		(2) Tins or caps of suitable make, effectively closed	5% if liquid	—	(2) Packed with effective absorbent material in wooden cases. If liquid not more than 10 gal. in each case.	—	(2) do.	(2) do	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed. *If solid*—	5% if liquid	100 gal. if liquid.	(3) —	—	(3) do.	(3) do	do	C.
		(4) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do	C.
		(5) Double-walled paper bags, securely closed.	—	—	(5) Packed tightly in outer cases.	—	(5) do	(5) do	do.	C

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p 33). (10)	Recommended Label or Stencil (11)
ARSENIC COMPOUNDS other than those mentioned above, including the following:— Arsenates, Arsenites, Sulphides and Organic Compounds of Arsenic	Solids, fine powders, or liquids, all of which are poisonous if taken internally. Care should be taken not to breathe the air laden with fine powder.	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal in each case.	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships.	None.	C.
		(2) do.	5% if liquid.	15 gal. if liquid.	(2) Packed singly in:— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with protective material	—	(2) do.	(2) do	do	C.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) do	(3) do	do	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) do	—	(4) do	(4) do	do.	C.
		(5) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(5) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal in each case	—	(5) do.	(5) do.	do	C.
		(6) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid	100 gal if liquid	(6) —	—	(6) do	(6) do	do	C.
		For solids:— (7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do	(7) do	do	C.
		(8) Double-walled paper bags, securely closed.	—	—	(8) Packed tightly in outer cases	—	(8) do *Note*: Sodium Arsenite should not be stowed in the same compartment as food and foodstuffs	(8) do	do	C.
BARIUM, BARIUM METAL	See Section 6 (Interaction with Water).									

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BARIUM COMPOUNDS other than those mentioned elsewhere in the Schedules, and excluding BARIUM SULPHATE, which is not a poison and is not dangerous	Solid, powder, lumps or crystals Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and doodstuffs.	(1) As for cargo ships	None.	C.
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) do	—	(4) do.	(4) do.	do.	C.
		(5) Tins or cans of suitable make, effectively closed.	—	—	(5) Packed with suitable protective material in wooden cases.	—	(5) do.	(5) do.	do.	C.
		(6) Suitable metal drums (e.g. steel), effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	C.
		(7) Suitable wooden barrels, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do.	(7) do.	do.	C.
		(8) Double-walled paper bags, securely closed.	—	—	(8) Tightly packed in outer cases	—	(8) do.	(8) do.	do.	C.
		(9) Sound hessian bags, paper lined, securely closed.	—	—	(9) —	—	(9) do.	(9) do.	do.	C.
CHLORODINITROBENZENE (Dinitrochlorobenzene).	Crystalline solid. Dermatitis may be produced by handling the powder and the fumes and fine dust have a markedly irritant action on the skin. Insoluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or	—	(2) do.	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHLORODINITROBENZENE (Dinitrochlorobenzene) (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) On or under deck. Away from food and foodstuffs	(3) As for cargo ships.	None	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do.	—
		(5) *For Home Trade ships only* (as defined in Section 742 of the Merchant Shipping Act, 1894) suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do	—
CHLORONITROBENZENE (Orthonitrochlorobenzene, Metanitrochlorobenzene, Paranitrochlorobenzene)	Crystalline mass. Insoluble in water. Danger in breathing air laden with fine dust. Dermatitis may be produced by handling these substances.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do	do.	—
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	—
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) do.	(3) do.	do.	—

(continued overleaf)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to radio-active (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHLORONITROBENZENE (Contd.)		(4) Suitable metal drums (e.g. steel), effectively closed	—		(4) —	—	(4) On or under deck. Away from food and foodstuffs.	(4) As for cargo ships.	None.	—
		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	—
CYANIDES as a class. (This does not include ferricyanides or ferrocyanides, which are not dangerous.) BARIUM CYANIDE, CALCIUM CYANIDE, COPPER CYANIDE, LEAD CYANIDE, MERCURY CYANIDE, NICKEL CYANIDE, POTASSIUM CUPRO CYANIDE, POTASSIUM CYANIDE, SILVER CYANIDE, SODIUM CYANIDE, ZINC CYANIDE, Surgical dressings containing small amounts of cyanides may be carried without restriction.	Very poisonous solids which may be absorbed through the skin with fatal results. In the presence of acids they decompose and give rise to the poisonous hydrocyanic acid gas; even exposure to air will in time lead to this result.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food, foodstuffs, acids and living quarters (see definition (A), page 5)	(1) do.	7	C.
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases.	250 lb.	(2) do	(2) do.	do.	C.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitably protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) do	—	(4) do	(4) do.	do.	C
		(5) Suitable metal drums (e.g. steel), effectively closed	—	—	(5) —	250 lb.	(5) do	(5) do.	do	C.
DINITROBENZENES (e.g. Metadinitrobenzene), DINITROTOLUENES.	Crystalline solid. Slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs	(3) do	None.	—
		(2) do	—	—	(2) Packed singly in:— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 58)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
DINITROBENZENES and DINITROTOLUENES (*Contd.*)		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and food-stuffs	(3) As for cargo ships.	None	—
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do.	—
		(5) Provided substance will remain solid at any temperature likely to be met with under all conditions of transport suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(5) —	—	(5) do.	(5) do.	do.	—
DISINFECTANTS, other than those of coal tar type, which are non-hazardous.	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
FUNGICIDES	To be packed and stowed in accordance with the rules applicable to the hazardous constituents									
INSECTICIDES	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
LEAD ACETATE (Sugar of lead).	Solid	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food and food-stuffs	(1) As for cargo ships.	None	C
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	C.
	—	(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) do.	(3) do.	do.	C.
		(4) Tins or cans of suitable make effectively closed.	—	—	(4) Packed with suitable protective material in wooden cases.	—	(4) do.	(4) do.	do.	C

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

							Stowage			
Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	Recommended Label or Stencil (11)
MERCURIC NITRATE, MERCUROUS NITRATE (see also Section 7, Strong Supporters of Combustion).	Crystals or powder which become liquid by absorbing moisture from the air. Strong oxidising agent. Dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	—
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do.	(3) do.	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—
MERCURY COMPOUNDS excluding Mercurous Chloride, which is not poisonous, and those mentioned above ; including the following :— *Note.* Where reference is made to a compound of mercury, it includes mercurous and mercuric. MERCURY ACETATE, MERCURY-AMMONIUM CHLORIDE,	These are mostly in the form of crystals or powders and are dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Mass or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MERCURY COMPOUNDS (*Contd.*) MERCURY, BENZOATE, MERCURY BISULPHATE, MERCURY BROMIDE, MERCURY GLUCONATE, MERCURY IODIDE, MERCURY NUCLEATE (Mercurol), MERCURY OLEATE, MERCURY OXIDE, MERCURY OXYCYANIDE, MERCURY POTASSIUM IODIDE, MERCURY SALICYLATE, MERCURY SULPHATE, MERCURY THIOCYANATE.		(3) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from food and foodstuffs	(3) As for cargo ships	None.	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed with suitable protective material in wooden cases	—	(4) do.	(4) do.	do.	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) do.	—	(5) do.	(5) do.	do.	—
		For solids only. (6) Suitable polythene bags, effectively closed	—	—	(6) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(6) do.	(6) do.	do.	—
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do.	(7) do.	do.	—
		(8) Double-walled paper bags, securely closed	—	—	(8) Tightly packed in outer cases	—	(8) do	(8) do	do	—
NICOTINE	Liquid.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal	(1) Packed with effective absorbent material in wooden cases or in fibreboard cases approved by the Ministry of Transport and Civil Aviation. Not more than 7½ gal. in each case.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships	do	C.
		(2) Tins or cans of suitable make, effectively closed.	5%	—	(2) do.	—	(2) do.	(2) do	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal.	(3) —	—	(3) do.	(3) do	do	C.
NICOTINE COMPOUNDS AND PREPARATIONS THEREOF :— NICOTINE HYDROCHLORIDE, including solutions of NICOTINE HYDROCHLORIDE.	In solid form, crystals which become liquid by absorbing moisture from the air. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid.	(1) Packed with suitable protective material in wooden cases or in fibreboard cases approved by the Ministry of Transport and Civil Aviation. If liquid, not more than 7½ gal. in each case.	—	(1) do.	(1) do	do	C.
		(2) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(2) do	—	(2) do	(2) do.	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal if liquid	(3) —	—	(3) do.	(3) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NICOTINE SHEEP DIPS	Liquids pastes or solids	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid	2½ gal if liquid	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal in each case.	—	(1) On or under deck Away from food and foodstuffs	(1) As for cargo ships	None	C.
		(2) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(2) Packed with suitable protective material in wooden cases If liquid not more than 10 gal in each case.	—	(2) do	(2) do	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid	100 gal. if liquid.	(3) —	—	(3) do	(3) do	do.	C.
NICOTINE SULPHATE	Solid or in solution. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid	2½ gal if liquid.	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	C.
		(2) Tins or cans of suitable make, effectively closed.	5% if liquid	—	(2) do	—	(2) do.	(2) do.	do.	C.
		(3) Suitable metal drums (e.g steel), effectively closed	5% if liquid	100 gal. if liquid	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) If solid this substance may also be carried in suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(4) —	—	(4) do	(4) do	do.	C.
NICOTINE COMPOUNDS other than those above and including the following:— NICOTINE SALICYLATE, NICOTINE TARTRATE.	Solid.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do	(1) do	do	C.
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases	—	(2) do	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(4) —	—	(4) do	(4) do	do.	C.
p-NITROANILINE (Paranitroaniline).	Solid Dust from this material is likely to cause poisoning and dermatitis Slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do	(1) do	do	—
		(2) do	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or	—	(2) do	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
p-NITROANILINE (Contd.)					(b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships.	None.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—
		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	—
p-NITROPHENOL (Paranitrophenol).	Solid. Slightly soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do.	(3) do.	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 50.)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
NICOTINE SHEEP DIPS	Liquids, pastes or solids.	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid.	2½ gal. if liquid	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal. in each case	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships	None.	C.
		(2) Tins or cans of suitable make, effectively closed	5% if liquid	—	(2) Packed with suitable protective material in wooden cases. If liquid not more than 10 gal. in each case.	—	(2) do	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal if liquid.	(3) —	—	(3) do	(3) do	do	C.
NICOTINE SULPHATE	Solid or in solution. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid	(1) Packed with suitable protective material in wooden cases. If liquid not more than 10 gal. in each case	—	(1) do	(1) do.	do	C.
		(2) Tins or cans of suitable make, effectively closed	5% if liquid.	—	(2) do.	—	(2) do	(2) do.	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal if liquid.	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) If solid this substance may also be carried in suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do.	C
NICOTINE COMPOUNDS other than those above and including the following — NICOTINE SALICYLATE, NICOTINE TARTRATE.	Solid.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do	do.	C
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do.	C.
p-NITROANILINE (Paranitroaniline).	Solid. Dust from the material is likely to cause poisoning and dermatitis. Slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or	—	(2) do.	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
p-NITROPHENOL (Paranitrophenol) (*Contd.*)		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) One under deck. Away from food and foodstuffs.	(5) As for cargo ships.	None.	—
NITROTOLUENE (Ortho-, para-nitrotoluene).	Solid or liquid. Almost insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid.	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal. in each case	—	(1) do.	(1) do	do.	do.
		(2) do.	5% if liquid.	15 gal. if liquid.	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with protective material.	—	(2) do.	(2) do.	do.	do.
		(3) Tins or cans of suitable make, effectively closed	5% if liquid.	—	(3) Packed with suitable protective material in wooden cases. If liquid not more than 10 gal. in each case.	—	(3) do.	(3) do.	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal if liquid.	(4) —	—	(4) do.	(4) do.	do	—
		(5) If solid *for Home Trade Ships only* (as defined in Section 742 of the Merchant Shipping Act, 1894). Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do	(5) do.	do	—
OXALIC ACID and OXALIC SALTS	Solid.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do	C.
		(2) do	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or	—	(2) do.	(2) do.	do.	C.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OXALIC ACID and OXALIC SALTS (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) On or under deck. Away from food and foodstuffs	(3) As for cargo ships.	None.	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) do	—	(4) do	(4) do.	do.	C.
		(5) Tins or cans of suitable make, effectively closed	—	—	(5) Packed with suitable protective material in wooden cases	—	(5) do	(5) do.	do	C.
		(6) Suitable metal drums (e.g. steel), effectively closed.	—	—	(6) —	—	(6) do	(6) do.	do	C.
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed., or suitable fibreboard drums, effectively closed	—	—	(7) —	—	(7) do.	(7) do.	do.	C.
		(8) Double-walled paper bags, securely closed	—	—	(8) Tightly packed in outer cases.	—	(8) do.	(8) do	do	C.
		(9) Suitable jute bags with heat sealed polythene liners.	—	—	(9) —	—	(9) do.	(9) do	do	C.
m-PHENYLENEDIAMINE (META-PHENYLENEDIAMINE)	Solid. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or	—	(2) do.	(2) do	do.	—

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53).	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
m-PHENYLENEDIAMINE (META-PHENYLENEDIAMINE). (*Contd.*)					(*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships.	None.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do.	—
		(5) Sound wooden casks or barrels, paper lined.	—	—	(5) —	—	(5) do.	(5) do.	do.	—
PHENOL (CARBOLIC ACID) and its homologues, e.g. cresols (CRESYLIC ACID) and other tar acids and liquid preparations thereof).	Solid or liquid, corrosive to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid.	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal. in each case.	—	(1) do	(1) do.	7	—
		(2) do	5% if liquid.	15 gal. if liquid.	(2) Packed singly in— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with protective material.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(3) Packed with effective absorbent material in wooden cases. If liquid not more than 10 gal. in each case.	—	(3) do.	(3) do.	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid.	100 gal. if liquid.	(4) —	—	(4) do.	(4) do.	do.	—
RAT POISONS	—	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.								
SHEEP DIPS	See Arsenical Sheep Dips and Nicotine Sheep Dips.	Sheep Dips other than these to be packed and stowed in accordance with the rules applicable to the hazardous constituents.								

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THALLIUM COMPOUNDS. THALLIUM ACETATE, THALLIUM BROMIDE, THALLIUM CARBONATE, THALLIUM CHLORIDE, THALLIUM HYDROXIDE, THALLIUM IODIDE, THALLIUM MONOXIDE, THALLIUM NITRATE, THALLIUM PEROXIDE, THALLIUM SESQUICHLORIDE, THALLIUM SULPHATE, THALLIUM SULPHIDE.	In the form of crystals, needles or powder—some soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	C.
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do	do.	C.
		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	C.
2 : 4-TOLYLENEDIAMINE (METATOLUYLENEDIAMINE).	Solid. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2 : 4-TOLYLENEDIAMINE (METATOLUYLENEDIAMINE) (*Contd.*)		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs	(3) As for cargo ships.	None.	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do.	—
		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	—
WEED KILLERS. (Some may contain Chlorates, for which see Section 7).	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
WOOD PRESERVATIVES	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
ZINC PHOSPHIDE	Solid. In contact with acids readily evolves phosphine.	(1) Tins or cans of suitable material, hermetically sealed.	—	28 lb per container Not more than 1 cwt. per case.	(1) Packed in wooden cases. Not more than 1 cwt. per case.	—	(1) Keep dry. On or under deck. Away from acids, inflammable substances and living quarters (see definition (B) page 5).	(1) Not allowed.	3	G and A 3
		(2) Suitable metal drums (e.g steel), hermetically sealed.	—	1 cwt.	—	—	(2) do.	(2) do.	do	G and A.3

SECTION 5

(Category (v) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Substances Giving Off Inflammable Vapours

SUB-SECTION I

GENERAL

1. These Recommendations do not apply to ships specially constructed to carry inflammable substances in bulk, i.e. tankers and similar vessels.

2. This section includes substances which have a flash point not higher than 150° F (65·6° C.) The main divisions of the section are —

Class A Substances having a flash point below 73° F. (22·8° C.).

This division is further sub-divided into :—

Class A(I)—substances of flash point under 73° F. immiscible with water, and

Class A(M)—substances having a flash point under 73° F. miscible with water.

Substances which are only partly miscible are to be regarded as immiscible.

Class B. Substances having a flash point from 73° F. (22·8° C.) to 150° F (65·6° C.).

Flash Point

3. The flashpoint is the temperature determined by methods, as described in paragraph 4, at which a combustible liquid gives off vapour which will take fire or explode if mixed with air and exposed momentarily to a naked light.

4. For substances having a flash point not below 66° F. (18·89° C.) but below 90° F. (32·2° C.) the flash point is that determined by the Abel close test; for substances having a flash point of 90° F (32·2° C.) up to 120° F. (48·9° C.) the flash point is that determined by a modified form of the Abel close test, and substances having a flash point above 120° F (48·9° C.) the flash point is that determined by the Pensky-Martens apparatus. For substances having a flash point below 66° F. (18·89° C.) the apparatus used for the Abel close test can be used with suitable modifications.

5. In the United Kingdom substances of flash point under 73° F. (22·8° C.) are classed as "Highly Inflammable", and the figure of 73° F. is the line of demarcation under the Petroleum Act. In climates where the temperature of the air approaches the flash point of the substance, precautions similar to those required for substances of lower flash points become desirable. For instance, in India some authorities place the demarcation line at 90° F. (32·2° C.)

Marking and Declaration

6. The nature of the goods must be distinctly marked on the outside of the package and a written declaration of their nature must be given by the shipper to the Master or the Owner of the ship before shipment. The declaration must state the flash point of the substance and if this is below 73° F (22·8° C.), must also state whether the substance is miscible. When the flash point is below 0° F. the flash point may be declared as "Flash point below 0° F.".

General Precautions Against Fire

7. (*a*) The chief danger associated with the carriage of substances in this Section is the escape of inflammable vapour. This might either form an inflammable mixture with air, leading to an explosion, or carry fire through becoming ignited by a spark or flame, to the place in which the substances are stowed. It is, therefore, necessary to stow the substances well away from naked lights, fires and any source of heat. A shelter deck space must not be used for the carriage of substances with a flash point below 73° F unless that portion of the space in which such substances are stowed is separated from the remainder of the shelter deck space by watertight steel bulkheads.

(*b*) Not more than 150 tons gross (or 50 per cent. of the compartment space, whichever is the greater) of inflammable substances, having a flash point below 73° F., may be stowed in any one compartment unless the electric light or power cables are in conduits, or otherwise suitably protected, and no junction boxes, switches, fuses, lamp fittings or other similar appliances are within the stowage space.

The 150 tons gross (or 50 per cent. of the compartment space, whichever is the greater) must not be exceeded unless the power supply is disconnected from any circuit not complying with these requirements.

(*c*) It should be noted that inflammable substances miscible with water may, in the event of fire, be extinguished by the application of water, but this treatment is not desirable in the case of substances immiscible with water. In such cases foam preparations or other methods should be used. Fire fighting apparatus of approved types must be carried.

(*d*) When inflammable substances are carried on deck, measures should be taken to prevent smoking or the use of naked lights near such substances.

Ventilation

8. The risk of fire or explosion will continue in the compartments in which these substances have been carried after the goods have been discharged, until the compartment has been thoroughly cleaned and ventilated to remove any liquid or vapour that may be present. It must be emphasised that naked lights should not be used in any compartments in which such goods have been carried until the compartments have been cleared of vapour.

9. (*a*) *In cargo ships* when the total quantity of substances of flash point under 73° F. does not exceed 25 tons gross in any one compartment, normal ventilation should be adequate.

(*b*) *In cargo ships* the total quantity of substances of flash point under 73° F. in any one compartment may exceed 25 tons gross, but must not exceed 150 tons gross, or 50 per cent. of the compartment's space, whichever is the less, provided ventilation is such that half of the ventilators extend to the bottom of the space, and the other half are practically flush with the deck. The short ventilators should be marked "outlet or to leeward", and the long ventilators "inlet or to windward". The ventilators should have large cowlheads, the openings being covered with double fine wire gauze. When inflammable liquids are stowed in the 'tween deck, drainage from the stowage space to the bilges should be sealed. When stowage is in a lower hold the bilge suction pipe from that compartment must be sealed off by the insertion of a ring and blank flange in a position accessible at all times usually in the machinery space.

(*c*) *In cargo ships* the total quantity of substances of flash point under 73° F. in any one compartment may exceed 150 tons gross, or 50 per cent. of the compartment space, whichever is the less, provided ejectors or gas extraction apparatus, or other effective forms of ventilation, are used to ensure adequate air circulation and expulsion of vapours which may accumulate When inflammable liquids are stowed in the 'tween deck, drainage from the stowage space to the bilges should be sealed. When stowage is in a lower hold the bilge suction pipe from that compartment must be sealed off by the insertion of a ring and blank flange in a position accessible at all times usually in the machinery space.

Requirements for Containers

10 These substances, except when carried in bulk, should be packed in hermetically sealed containers which should either be specially protected or be sufficiently strong to withstand normal usage incidental to transport. To provide for thermal expansion there should be an adequate amount of free space in the containers. Except in cases where a minimum air space is prescribed in Sub-section III, the minimum air space to be left in containers is to be based on the following formula :—

$$\%\ \text{ullage} = \text{Cubical co-efficient of expansion per}\ ^\circ\text{C.} \times (45 - \text{T}^\circ\ \text{C.}) \times 100$$

$$(\text{T} = \text{filling temperature}\ ^\circ\text{C.})$$

11. The carriage of empty containers which have contained petroleum spirit or other liquids having a low flash point, requires precautions similar to those for the carriage of the substance previously carried. To prevent the escape of vapour, the screw plugs or bungs, or other means of closure, should be securely closed.

Miscellaneous

12. This Section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions of Section 9 applicable to laboratory and/or medicinal preparations in limited quantities.

13. Any modification of the above Recommendations is indicated against the individual items in Sub-section III.

SUB-SECTION II

LIST OF INFLAMABLE SUBSTANCES

This list contains only the substances which, hitherto, have been carried generally and it is not exhaustive. Substances not included will fall into their appropriate places according to their flash points and, for those with a flash point below 73° F., according also to whether or not they are miscible with water. The flash points have been taken from various sources and are only approximate.

Substances	Properties*	Flash Point
Acetaldehyde (Aldehyde) ..	M	Under 0° F. (—18° C.)
Acetone	M	3° F. (—16° C.)
Acetone Oils ..	I	90° to 112° F. (32° to 44° C.)
Acrolein (Acraldehyde) .	M Poisonous	About 45° F. (7° C.)
Acrylonitrile .	I Poisonous	32° F. (0° C.)
Aeroplane Dope .	I	Under 0° F. (—18° C.) to 50° F. (10° C.)
Alcohols (liquid) in general	I and M	See name of alcohol
Alcohol, Denatured	M	50° F. (10° C.)
Alcohol, Industrial . ..	M	50° F. (10° C.)
Aldehydes, in general ..	I and M	See name of Aldehyde
Allyl Alcohol	I Poisonous	70° F. (21° C.)
Amyl Acetate .. .	I	70° to 90° F. (21° to 32° C.)
Amyl Alcohol, e g normal, iso-, secondary and tertiary; Fusel Oil	I	67° to 130° F. (20° to 54° C.)
Amyl Chloride ..	I	34° F. (1° C)
Amyl Methyl Ketone (Methyl Amyl Ketone .	I	120° F. (49° C.)
Amyl Nitrate .. .	I	118° F. (48° C.)

* Substances marked I are immiscible with water
Substances marked M are miscible with water

Substance	Properties*	Flash Point
Amyl Nitrite	I	24° F. to 32° F (—4° C. to 0° C)
Anti-freeze Compounds ..	M Some are poisonous	50° to 150° F. (10° to 66° C.) and over
Benzaldehyde ..	I	143° F. (62° C.)
Benzene (Benzol) ..	I Narcotic	Under 0° F. (—18° C.)
Benzyl Chloride .	See pages 146-147	140° F. (60° C.)
Bitumen cut-backs, containing (a) more than 17½% Kerosene, or (b) any white spirit, or the Class B solvent .	I	80° to 100° F. (27° to 38° C.)
Bituminous Paints ..	I See page 148	80° to 110° F. (27° to 43° C.)
Boot Polishes ..	See page 152	Variable
Bottle Capping Fluid . ..	I	do.
Box Toe Gum . ..	I	80° to 150° F (27° to 66° C.)
Brake Fluid, Hydraulic	I	48° to 104° F (9° to 60° C.)
Bromobenzene (Monobromobenzene)	I	148° F. (65° C.)
Bronzing Liquids	I	70° to 90° F. (21° to 32° C.)
Butanol (Butyl Alcohol)	M	97° F. (36° C)
iso Butanol (Isobutyl Alcohol)	M	80° F. (27° C.)
sec Butanol (Secondary Butyl Alcohol) . .	M	77° F. (25° C.)
tert Butanol (Tertiary Butyl Alcohol)	M	53° F. (12° C.)

* Substances marked I are immiscible with water.
Substances marked M are miscible with water.

Substance	Properties*	Flash Point
Butyl Acetate	I	83° F (28° C.)
Butyraldehyde	M	20° F (—7° C.)
Camphor Oil	I	125° F (52° C.)
Carbon Disulphide (Carbon Bisulphide)	See page 147	Under 0° F (—18° C.)
Cellulose Enamels and Lacquers	See page 148	Under 73° F (23° C.) but variable
Cement, Bostik	I	do
Cement, Jointing	I	do
Cement, Leather	I	do
Cement, Liquid	I	do.
Cement, Roofing, Liquid	I	do
Cement, Rubber Solution (Vulcanising Compounds)	I	do
Chlorobenzene (Monochlorobenzene)	I	80° to 120° F. (27° to 49° C.)
2-Chloroethanol (Ethylene Chlorohydrin)	I	140° F (60° C.)
Coal Tar, Distillate, containing Benzene or Homologues (Coal Tar Oil)	I	do.
Coal Tar Light Oil (Lower Boiling Coal Tar Oils)	I	do
Coal Tar Naphtha .. .	I	60° to 77° F (16° to 26° C.)
Collodion Flex	I	0° F (—18° C.)
Colour Indent	M	Flash point variable (about 77° F. (25° C.)
Correcting Fluid	I	32° F (0° C.)
Corrosion Inhibitor .. .	I	75° F (24° C.)
Crotonaldehyde	I	55° F (13° C.)
Decahydronaphthalene (Decalin)	I	134° F (57° C.)
De-icing Fluid	I	59° F (15° C.)
Diacetone Alcohol .. .	M	Variable according to degree of purity Between 48° F and 170° F (9° to 77° C.)
Dibutyl Ether (Butyl Ether) ..	I	100° F (38° C.)
Diisobutyl Ketone ..	I	140° F (60° C.)
1 . 2-Dichloroethane (Ethylene Dichloride)	I	56° F (13° C.)
1 · 2 Dichloroethylene (Acetylene Dichloride)	I Anaesthetic	35° F. to 45° F. (2° C to 7° C.)
Dichloropentanes	I	97° to 100° F (36° to 38° C.)
1 : 2-Diethoxyethane (Ethylene Glycol Diethyl Ether)	I	100° F (38° C.)
Diethylamine	M	Under 0° F (—18° C.)

* Substances marked I are immiscible with water.
Substances marked M are miscible with water

Substance	Properties*	Flash Point
Di-Ethyl Ether (Ethyl Ether, Anæsthetic Ether, Sulphuric Ether)	See pages 148-149	Under 0° F. (—18° C.)
Dimethylamine, Solution ..	M	32° F. (0° C.)
Diisopropyl Ether (Diisopropyl Oxide)	See pages 148-149	—70° F. (—21·5° C.)
Drugs, Medicines, according to composition . ..		Variable
Drums, empty, previously containing inflamables	See page 141	do.
Eradicators, Paint or Grease Liquid	I	do.
Essences	M and I	do
Essential Oils, in general ..	I	Varies according to type
Ethanol (Ethyl Alcohol) ..	M	50° F. (10° C.)
2-Ethoxyethanol (Ethylene Glycol Monoethyl Ether)	M	130° F. (54° C.)
2-Ethoxyethyl Acetate (Ethylene Glycol Monoethyl Ether Acetate)	M	140° F. (60° C.)
Ethyl Acetate	I	24° F. (—5° C.)
Ethylbenzene	I	85° F. (29° C.)
Ethylbutyl Acetate	I	137° F. (58° C.)
Ethyl Butyrate	I	95° F. (35° C.)
Ethyl Chloride (Chloroethane)	See page 14	Below 0° F.
Ethyl Chloroacetate	I	130° F. (54° C.)
Ethyl Chloroformate (Ethyl Chlorocarbonate)	See page 14	32° to 82° F. (0° to 27° C.)
Ethyl Formate	I	10° F. (—12° C.)
Ethylhexaldehyde	I	125° F. (52° C.)
Ethyl Lactate	M	115° F. (46° C.)
Ethyl Methyl Ketone (Methyl Ethyl Ketone)	M	30° F. (—1° C.)
Ethyl Nitrite (Nitrous Ether)	I	Under 0° F. (—18° C.)
Ethylene Oxide (Oxirane, Epoxyethane) .	M See page 15	Under 20° F. (—7° C.)
Extracts, Flavouring, liquid ..	M	Variable
Formaldehyde Solution (Formalin) ..	M	Variable from 120° F. (49°C.) upwards
Furfural	I	130° F. (54° C.)
Furniture Stain, spirituous ..	I	51° F. (11° C.)
Gas Drips, Hydrocarbon ..	I	Variable under 73° F. (23° C.)
Gas Oil	I	100° to 150° F. (38° to 66° C.)

* Substances marked I are immiscible with water.
Substances marked M are miscible with water.

Substance	Properties*	Flash Point
Glyceryl Trinitrate (Nitroglycerin Solution (5% in Alcohol))	See page 152	Variable
Gutta Percha Solution ..	I	Varies according to solvent
Hexaldehyde ..	I	90° F. (32° C.)
Ink, Printers' ..	I	Variable
Insecticide, liquid . ..	See page 148 I	Variable according to solvent
Kerosene . .	I	81° to 140° F. (27° to 60° C.)
Ketones, liquid, in general	I and M	See name of Ketone
Lacquer-base, liquid	I	Variable
Lacquer-chips, wet with inflammable liquid	I	do
Lacquers	See page 148 I	do
Lamp Oil .	I	81° to 140° F. (27° to 60° C.)
Leather Dressing .	I	Variable
Lighter Fuel .	I	Under 0° F. (—18° C.)
Medicinal Tinctures .	I and M	Varies according to solvent
Mercaptans and Mixtures thereof	I	About 80° F. (27° C.)
Mesityl Oxide	I	90° F. (32° C.)
Methanol (Methyl Alcohol, Wood Alcohol, Columbian Spirits) .	M	32° F. (0° C.)
2-Methoxyethanol (Ethylene Glycol Monomethyl Ether)	M	115° F. (46° C.)
2-Methoxyethyl Acetate (Ethylene Glycol Monomethyl Ether Acetate)	M	140° F. (60° C.)
Methyl Acetate ..	I	25° F. (—4° C.)
Methyl Acetone .	M	4° to 10° F. (—15° C. to —12° C.)
Methylamyl Acetate .	I	113° F. (45° C.)
Methyl Chloroformate	See pages 150-151	Under 73° F. (23° C.)
Methyl Formate ..	I	Under 0° F. (—18° C.)
Methyl Methacrylate Monomer	I	46° F. (8° C.)
Methylated Spirit	M	51° F. (11° C.)
Motor Spirit (Gasoline, Petrol)	I	Under 0° F. (—18° C.)
Naphtha, Coal Tar	I	60° to 77° F. (16° to 25° C.)
Naphtha Distillate	I	Under 0° F. (—18° C.)
Naphtha, Petroleum .	I	Under 0° F. (—18° C.)
Naphtha, Solvent	I	60° to 77° F. (16° to 25° C.)
Natural Gasoline (Casinghead Gasoline)	I	Under 0° F. (—18° C.)
Nickel Carbonyl .	See page 151	
Nitrocellulose (Collodion Cotton), wet with an inflammable liquid	I	Varies according to inflammable liquid
Nitroglycerin Solutions Ethyl Alcohol	See page 152	Under 73° F. (23° C.)
Nitromethane, when not in a pressure vessel		95° F. (35° C.)
Paints, in general ..	I	Variable
Paraffin	See page 148 I	81° to 140° F. (27° to 60° C.)
Paraldehyde ..	M	100° F. (38° C.)
Pentane	I	Under 0° F. (—18° C.)
Perfumery Products containing Inflammable Solvents ..	M	60° to 80° F. (16° to 27° C.)
Petroleum Crude Oil .. .	I	Under 0° F. (—18° C.)
Petroleum Distillate .	I	Variable
Petroleum Naphtha .	I	Under 0° F. (—18° C.)
Petroleum Oil	I	Variable
Petroleum Spirit (Benzine, Benzolene, Lythene, Petroleum Ether)	I	Under 0° F. (—18° C.
Pine Oil	I	135° to 150° F. (57° to 66° C.)
Polish, Boot . ..	I	Variable
Polishing Compounds .	See page 152 I	do.
Polish, Floor . .	I	do.
Polish, Metal ..	See page 152 I	do.
Polish, Stove .	I	do
Potable Spirits (e.g. Brandy, Gin, Rum, Whisky) .	M	Variable
Propanol (Propyl Alcohol)	See page 153	73° F. (23° C.)
*iso*Propanol (Isopropyl Alcohol)	M	54° F. (12° C.)
Pyridine .	M	68° F. (20° C.)
Pyroxylin Solutions .	I and M	Variable but under 73° F. (23° C.)
Pyroxylin Solvents . ..	I and M	do
Propylene Oxide (Propene Oxide, 1, 2-Epoxypropane) ..	See page 153	About—36° F. (—38° C.)
Resealing Compound ..	I	do.
Rosin Oil .	I	Variable
Rubber (Indiarubber) Solution in an inflammable solvent. ..	I	do.
Rust Inhibitor	I and M	75° F. (24° C.)
Rust Preventive Coating ..	I	Variable
Shale Oil .	I	do.
Shellac Liquid	M	51° F. (11° C.)

* Substances marked I are immiscible with water
Substances marked M are miscible with water

* Substances marked I are immiscible with water.
Substances marked M are miscible with water

Substance	Properties*	Flash Point
Ship's Composition	I	Variable
Spirit, High Proof	M	51° to 73° F. (11° to 23° C.)
Spirits, Potable (e.g. Brandy, Gin, Rum, Whisky)	M See page 153	Variable
Sweet Spirit of Nitre B.P.C., (Spirit of Nitrous Ether, B.P.C., Spirit of Ether Nit, B.P.C.) ..	M	About 6° F. (—14° C.)
Tar Liquid	I	do
Tetraethyl Silicate (Ethyl Silicate)	M	125° F. (52° C.)
Thinners for Paints, Lacquers or Varnishes (Reducing Compounds)	I	Variable
Tinctures, containing inflammable solvents	I and M	do

* Substances marked I are immiscible with water
Substances marked M are miscible with water

Substance	Properties*	Flash Point
Toluene (Toluol)	I	45° F. (7° C.)
Turpentine	I	90° to 116° F. (32° to 47° C.)
Turpentine Substitute (White Spirit)	I	80° to 110° F. (27° to 43° C.)
Type-cleaning Liquid	I	Variable
Varnish	I See page 148	do.
Waterproofing Preparations ..	I	do.
Wax Dipping Solution ..	I	do.
Wood Preservatives containing inflammable liquids	I	do.
Wood Stain, spirituous ..	M	52° F. (11° C.)
Xylene (Xylol)	I	73° F. (23° C.)

* Substances marked I are immiscible with water.
Substances marked M are miscible with water

SUB-SECTION III

SCHEDULE OF PACKING AND STOWAGE REQUIREMENTS

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc.	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CLASS A(I) SUBSTANCES GENERALLY (except substances specifically mentioned elsewhere in this schedule)	Flash point below 73° F. (22·8° C.) Immiscible with water	(1) Glass or earthenware containers of suitable make, hermetically sealed.	2½%	1 gal.	(1) Packed in wooden cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 16 gal. in each case.	—	(1) On or under deck. If under deck, the special conditions for ventilation set out in para. 9 (*a*), (*b*) and (*c*) apply. Away from living quarters (see definition (B), page 5).	(1) On deck only. The total quantity of Class A(I), Class A(M) and Class B substances should not exceed 5 tons gross weight per 100 feet length of the ship and in no case should it exceed 25 tons gross without the permission of the Ministry of Transport and Civil Aviation.	3	A.1

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc.	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CLASS A(I) SUBSTANCES GENERALLY (*Contd.*)		(2) Tins or tubes of suitable make, hermetically sealed.	See para. 10, page 141	1 gal.	(2) Packed in wooden cases. Not more than 16 gal. in each case.	—	(2) On or under deck. If under deck, the special conditions for ventilation set out in para. 9 (*a*), (*b*) and (*c*) apply. Away from living quarters (see definition (B) page 5)	(2) On deck only. The total quantity of Class A(I), Class A(M) and Class B substances should not exceed 5 tons gross weight per 100 feet length of the ship and in no case should it exceed 25 tons gross without the permission of the Ministry of Transport and Civil Aviation.	3	A.1
		(3) Metal containers of suitable make, hermetically sealed.	do.	5 gal.	(3) —	—	(3) do	(3) do.	do.	A.1
		(4) Suitable metal drums (e.g. steel), hermetically sealed	do	100 gal	(4) —	—	(4) do.	(4) Not allowed except by permission of the Ministry of Transport and Civil Aviation.	do.	A.1
CLASS A(M) SUBSTANCES GENERALLY (except substances specifically mentioned elsewhere in this schedule).	Flash point below 73° F. (22·8° C.) Miscible with water.	(1) Glass or earthenware containers of suitable make, hermetically sealed.	2½%	1 gal.	(1) As for A(I) (1).	—	(1) do.	(1) As for A(I) (1)	3	A.1
		(2) Tins or tubes of suitable make, hermetically sealed.	See para. 10, page 141.	1 gal.	(2) As for A(I) (2)	—	(2) do	(2) do	do.	A.1
		(3) Metal containers of suitable make, hermetically sealed.	do.	5 gal.	(3) —	—	(3) do.	(3) do	do.	A.1
		(4) Suitable metal drums (e.g. steel), hermetically sealed.	do.	100 gal.	(4) —	—	(4) do.	(4) do.	do.	A.1

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc.	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions (in stowage in relation to explosives (see p. 53))	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CLASS B SUBSTANCES GENERALLY (except substances specifically mentioned elsewhere in this schedule).	Flash point from 73° F to 150° F (22·8° C. to 65·6° C.)	(1) Glass or earthenware containers of suitable make, hermetically sealed.	2½%	1 gal.	(1) Packed in wooden cases, or fibreboard cases approved by the Ministry of Transport and Civil Aviation, with suitable protective material such as sawdust or thick corrugated paper. Not more than 16 gal. in each case.	—	(1) On or under deck.	(1) As for cargo ships.	4 below deck; 3 on deck.	A.2
		(2) Tins or tubes of suitable make, hermetically sealed.	See para. 10 page 141.	1 gal	(2) Packed in wooden cases, or fibreboard cases approved by the Ministry of Transport and Civil Aviation. Not more than 16 gal in each case.	—	(2) do.	(2) do	do.	A.2
		(3) Metal containers of suitable make, hermetically sealed.	do.	5 gal.	(3) —	—	(3) do.	(3a) Up to flash point 122° F. As for (A)(1)(1) (3b) Above flash point 122° F. On or under deck	do.	A.2
		(4) Suitable metal drums (e.g. steel), hermetically sealed	do	100 gal.	(4) —	—	(4) do	(4) do.	do.	A.2
BENZYL CHLORIDE	Liquid. Pungent odour. Irritant to the eyes and respiratory organs. Inflammable. Flash point 140° F	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal.	(1) Packed with suitable protective material in wooden cases. Not more than 10 gal. in each case.	—	(1) On deck only.	(1) Not allowed.	None.	A.2
		(2) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	10%	50 gal.	(2) —	—	(2) do.	(2) do.	do.	A.2
		(3) *When packed with a caustic stabiliser.* Suitable metal drums (e.g. steel), effectively closed	10%	50 gal.	(3) —	—	(3) do.	(3) do.	do.	A.2
		(4) Glass or earthenware containers of suitable make, effectively closed.	10%	10 gal.	(4) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or	—	(4) do.	(4) do.	do.	A.2

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc.	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BENZYL CHLORIDE (*Contd.*)					(*e*) wooden cases with protective material.					
CARBON DISULPHIDE (Carbon bisulphide).	Flash point below 0° F (— 18° C.). Mobile liquid, heavier than water, with which it does not mix. Very volatile, vapours will escape through a very small opening. Both vapour and liquid will take fire at a very low temperature. Mixtures of vapour with air or oxygen are explosive within a much wider range than in the case of petroleum spirit vapour. Poisonous.	(1) Glass or earthenware containers of suitable make, hermetically sealed.	10%	5 pints	(1) Packed with suitable protective material in a tightly closed container either of sufficient strength to withstand rough usage or protected by an outer case. Provision should be made for the stoppers of the bottles to remain uppermost during transit and the outer container should be marked to ensure this. Not more than 3 gal. in each case.	—	(1) On deck only Protected from lights and sparks Stowed away from all other goods and at a distance from all sources of artificial heat such as steam pipes, fittings, etc., and at a distance from hatchways or other deck openings, and from all living quarters. Smoking in the vicinity must be strictly prohibited Total quantity of carbon disulphide in the consignment should not exceed 10 cwt.	(1) Not allowed.	1; 5 when safety class ammunition is carried and 3 when other explosives defined in paragraph 3 on page 7 are carried	A.I
		(2) Strongly made and perfectly tight drums tested by hydraulic pressure to at least 20 lb per square inch for temperate climates and 40 lb per square inch for tropical climates.	10%	—	(2) —	2 cwt.	(2) On deck only The drums should be examined daily during daylight and if any leakage or odour is detected should be immediately thrown overboard. Leakage may exist without any liquid being visible.	(2) do.	do.	A
		(3) Strongly made and perfectly tight drums tested by hydraulic pressure to at least 40 lb. per square inch and approved by the Ministry of Transport and Civil Aviation.	10%	50 gal.	(3) —	—	(3) As for (2) above.	(3) do.	do.	A.I
CELLULOSE ENAMELS (Carried in uncrated motor-cars, for re-touching).		Metal containers of suitable material and make, hermetically sealed.	2½%	1 pint	Packed with suitable protective material in a wooden or fibreboard box, which should be securely fixed to the boot of the car to prevent any movement. May be carried in the boot of a car only, and must be declared before shipment.	—	On or under deck.	As for cargo ships	4	—

Note.—"Touch-up" pencils which contain approximately ½ fluid ounce of paint when shipped singly as part of the tool kit of a motor car may be regarded as non-hazardous.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc.	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage				Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CELLULOSE AND OTHER ENAMELS, LACQUERS, PAINTS VARNISHES AND PRINTERS' INK, EXCLUDING THINNERS.	Consist of compounds in solution and in suspension, with volatile solvents. Flash point variable.	(1) Glass or earthenware containers of suitable make, hermetically sealed	2½%	1 gal	(1) Packed in wooden cases, or fibreboard cases approved by the Ministry of Transport and Civil Aviation with suitable protective material such as sawdust or thick corrugated paper Not more than 16 gal. in each case.	—	(1) On or under deck. Away from living quarters (see definition (B), page 5).	(1) As for cargo ships. Total quantity, flash point under 73° F., not to exceed 25 tons gross in addition to any other inflammable substances carried.	4	A.1 under 73° F P. A.2 73° to 150° F.P.
		(2) Tins or tubes of suitable make, hermetically sealed.	See para. 10, page 141.	1 gal.	(2)(*a*) Packed in suitable wooden cases or casks, not more than 25 gal. in each case or cask. (2) (*b*) Packed in fibreboard cases approved by the Ministry of Transport and Civil Aviation. Not more than 16 gal. in each container	—	(2) do	(2) do.	do.	do.
		(3) Metal containers of suitable make, hermetically sealed.	do.	10 gal.	(3) —	—	(3) do.	(3) do.	do.	do.
		(4) Suitable metal drums (e.g. steel), hermetically sealed.	do.	100 gal.	(4) —	—	(4) do.	(4) Class B, as for (1). Class A not allowed	do.	do.
	(5) Oil varnish, spirit varnish and varnish base (flash point 73°F to 150°F).	(5) Suitable wooden barrels, effectively closed.	See para. 10 page 141.	—	—	—	(5) On or under deck.	(5) On deck only.	4	A 2
					Note :—Stowage under living accommodation is permitted when the flash point exceeds 73°F.					
DI-ETHYL-ETHER (Ether, Sulphuric Ethyl Ether). Fl. pt. — 40° F. (— 40° C.) (including mixtures containing more than 25% ether), and DI-ISOPROPYL ETHER (di-*iso*-propyl oxide). Fl. pt. — 7° F (— 21·5° C.).	Anesthetic. Mobile liquid lighter than water. Slightly soluble in water very volatile, highly inflammable. Mixtures of vapour with air or oxygen are explosive within a much wider range than in the case of petroleum spirit vapour	(1) Glass or earthenware containers of suitable make, hermetically sealed	10%	1 gal.	(1) Packed in wooden cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 16 gal. in each case.	—	(1) On or under deck. Away from living quarters (see definition (B), page 5)	(1) On deck only Maximum quantity permitted 2 cwt. gross	1, 5 when safety class ammunition is carried and 3 when other explosives defined in paragraph 3 on page 7 are carried	A.1
		(2) Tins or cans of suitable make, hermetically sealed.	10%	1 gal	(2) As for (1). Cardboard boxes may be used in place of the protective material.	—	(2) As for (1).	(2) do.	do.	A.1

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties, Flash point, Miscibility with Water, etc. (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
DI-ETHYL-ETHER (*Contd.*)		(3) Steel drums. The drums must be tested by hydraulic pressure to at least 20 lb per square inch for temperate climates and 40 lb. per square inch for tropical climates	10%	—	(3) —	7½ cwt.	(3) On deck only. Total quantity not to exceed 25 tons. Smoking and the use of naked lights in the vicinity of this substance must be strictly prohibited.	(3) Not allowed.	do.	A.1
ETHYL CHLORIDE (Chloroethane) (see also Gases Section, page 63).	Gas at ordinary temperatures Mobile liquid below 54·5° F. (12·5° C.) or under pressure. Anaesthetic. Fl. pt. below 0°F	(1) Glass containers of suitable make, hermetically sealed	7½%	4 oz.	(1) Packed in metal-lined cases with suitable protective material such as sawdust or thick corrugated paper Not more than 4 gal in each case	—	(1) On deck, or under deck in a well ventilated space.	(1) Not allowed.	3	A.1
		(2) Steel drums tested and proved free from leakage under hydraulic pressure of 100 lb per square inch or otherwise as approved by the Administration.	Filling ratio (see Gases Section) 0·82 temperate climates; 0·79 tropical climates.	50 gal.	(2) —	—	(2) On deck or under deck in a well ventilated space Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), food or foodstuffs, corrosives and readily combustible solids and strong supporters of combustion. To be kept cool Total quantity not to exceed 5 tons gross.	(2) do.	do	A.1
ETHYL CHLOROFORMATE (ETHYL CHLOROCARBONATE).	Liquid. POISONOUS AND CORROSIVE. Fl. pt. variable, about 61°F (16·11° C.). Immiscible with water.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	1 gal.	(1) Packed in wooden cases with suitable protective material. Not more than 6 gal. in each case.	—	(1) On deck only	(1) As for Class A(I) (1).	3	A.1 & C, Fl pt. below 73° F. A.2 & C Fl pt. 73° to 150° F
		(2) do	10%	10 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*c*) Wooden cases with protective material.	—	(2) do.	(2) do.	do.	do.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties, Flash point, Miscibility with Water, etc. (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	
ETHYLENE OXIDE (see also Gases Section, page 63) (Oxirane Epoxyethane).	Gas at ordinary temperatures. Mobile liquid below 10·7° C. (51° F.) or under pressure. To prevent potential explosive polycondensation, it is necessarily rigidly to exclude acids and bases of all kinds of chlorides. Water should also be excluded.	(1) Glass containers of suitable make, hermetically sealed	Filling ratio (see Gases Section) 0·75 temperate climates; 0·72 tropical climates	3½ oz.	(1) Packed in cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 2 gal. in each case.	—	(1) On or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive and readily combustible solids and strong supporters of combustion. To be kept cool. Maximum quantity permitted 5 tons gross.	(1) Not allowed	2	A 1
		(2) Steel drums tested and proved free from leakage under hydraulic pressure of 100 lb per square inch or otherwise as approved by the Ministry of Transport and Civil Aviation	do.	50 gal	(2) —	—	(2) do.	(2) do.	do	A 1
MEDICINAL AND PERFUMERY PRODUCTS AND FLAVOURING ESSENCES containing alcohol and/or acetone Fl. pt. not below 60° F. (16° C.) Does not include preparations containing nitroglycerine or any unstable or reactive compound or any inflammable solvent other than alcohol or acetone.		(1) Glass or earthenware containers of suitable make, hermetically sealed	2½%	5 pt.	(1) Packed in wooden cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 10 gal in each case.	—	(1) No restriction	(1) No restriction.	4	—
		(2) Tins or tubes of suitable material and make, hermetically sealed	2½%	5 pt.	(2) Packed in strong wooden cases. Not more than 10 gal. in each case	—	(2) do	(2) do	do.	—
METHYL CHLOROFORMATE (Methyl Chlorocarbonate).	Poisonous and corrosive. Fl. pt. under 73°F. Immiscible with water	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	1 gal.	(1) Packed in wooden cases with effective absorbent material. Not more than 6 gal in each case.	—	(1) On deck only	(1) As for Class A(I) (1)	3	A.1
		(2) do	10%	10 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ,	—	(2) do	(2) do	do.	A.1

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties, Flash point, Miscibility with Water, etc. (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	
METHYL CHLOROFORMATE (*Contd.*)					(*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*c*) wooden cases with protective material.					
NICKEL CARBONYL	Liquid. Inflammable and highly poisonous. Boils at 109° F (43° C.).	*FOR TEMPERATE CLIMATES ONLY.* (1) Glass bottles of suitable make, stoppered and luted.	10% filled with carbon monoxide or inert gas.	—	(1) Packed with kieselguhr or other suitable protective material in hermetically sealed tins. Packed in strong outer wooden cases. Not more than 8 lb of nickel carbonyl in each case.	—	(1) On deck only. Total quantity not to exceed 1 cwt. gross weight. To be kept cool and protected from the rays of the sun.	(1) Not allowed.	1; 5 when safety class ammunition is carried and 3 when other explosives defined in paragraph 3 on page 7 are carried.	A.1 and C.
		TEMPERATE AND TROPICAL CLIMATES (2) Suitable iron or steel cylinders.	do.	—	(2) —	—	(2) Under deck in a well ventilated space away from other inflammable cargo, living quarters (see definition (B), page 5), and all sources of heat such as steam pipes, etc. Not to be overstowed by heavy cargo.	(2) do	do.	A.1 and C

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties, Flash point, Miscibility with Water, etc. (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
NITROGLYCERIN, solutions in ethyl alcohol. Not exceeding 5% by weight of nitroglycerine. *Note*. Tablets containing not more than 1% Glyceryl Trinitrate are not considered to be hazardous	Fl. pt. below 73° F	Glass containers of suitable make, adequately stoppered with rubber stoppers or waxed corks and securely sealed.	7½%	1½ lb (500 g.) of solution.	Packed in wooden cases with inorganic material such as kieselguhr or whiting sufficient to absorb all the liquid in the containers in the event of leakage.	—	On deck. The maximum weight in any one ship not to exceed 500 g. nitroglycerine, e.g. twenty 500 g. bottles of 5% solution.	As for cargo ships	3	A.1
PASTES AND SEMI-SOLIDS (e.g. boot polishes, india rubber solution, nitrocellulose, putty and similar substances)		(1) Tins with tight fitting lids, or tubes or other equally satisfactory containers, effectively closed.	—	—	(1) Packed in suitable outer containers.	—	(1) On or under deck.	(1) As for cargo ships	4	A.1 fl. pt. under 73° F. A.2 fl. pt. 73° F to 150° F.
		(2) Suitable metal containers (e.g. steel), effectively closed. *Note*.—Pastes or semi-solids in normal domestic use, e.g. dental pastes, boot polishes and creams, floor and furniture polishes and creams and impregnated wadding polishes may be regarded as non-hazardous under the following conditions:— (1) Substances packed in tins with tight fitting lids, tubes or other equally satisfactory containers, effectively closed (*a*) The flash point must not be less than 70°F (*b*) The capacity of the tin or tube must not exceed 1 lb 4 oz.	—	—	(2) When sealed metal containers are of less than 14 lb net capacity they should be packed in outer wooden cases, or fibreboard cases approved by the Ministry of Transport and Civil Aviation.	—	(2) do.	(2) do.	do	do.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PASTES AND SEMI-SOLIDS *(Contd.)*		(c) The tins and tubes should be packed in outer wooden cases when the flash point is between 70°F and 90°F. When the flash point is above 90°F. any suitable outer containers may be used. (2) Substances packed in effectively closed tins or drums exceeding 1 lb. 4 oz capacity but not exceeding 28 lb. (a) The flash point must not be less than 90°F. (b) The tins or drums must be packed in outer wooden cases								
PETROL (in the tanks of motor vehicles)	(1) *IN HOME TRADE SHIPS AS DEFINED IN SECTION 742, MERCHANT SHIPPING ACT*, 1894. No restriction on the amount of petrol carried in the tank of the vehicle. The flow of spirit is to be shut off. Spare tins of petrol must not be carried. When the motor vehicle is being conveyed in a vessel at the same time as the motor vehicle owner or authorised representatives, the limit may be extended to include vessels operating between the Port of Newcastle in the U.K. and the Ports of Bergen and Oslo in Norway (2) *FOR OTHER VOYAGES* Petrol tanks to be drained before the vehicle is shipped. Spare tins of petrol must not be carried.						(1) On or under deck. (2) do	(1) As for cargo ships. (2) do.	3 None.	— —
POTABLE SPIRITS	Miscible with water Flash point variable.	(1) Glass or earthenware containers of suitable make, hermetically sealed. (2) Suitable metal or wooden barrels, effectively closed	2½% 2½%	— —	(1) Packed in wooden or fibreboard outer cases with suitable packing material (2) —	— —	(1) do. (2) do	(1) do (2) do	4 do	— —
PROPYLENE OXIDE (propene oxide, 1, 2-epoxypropane)	Colourless, volatile, inflammable liquid; ethereal odour Flash point about —36°F. (—38°C.) Moderately soluble in water.	PACKING STOWAGE AND LABELLING AS FOR DI-ETHYL ETHER (Page 148)								

SECTION 6

(Category (vi) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Substances which become Dangerous by Interaction with Water

GENERAL NOTES

1. General

This Section includes substances which, by interaction with water, are liable to become spontaneously inflammable, or to give off inflammable or poisonous gases. It does not include substances which are themselves easily inflammable but in which no rise in temperature takes place when they are exposed to water nor those which become corrosive in contact with water.

2. Packing

The substances in this Section require, except where expressly stated, to be packed in water-tight packages sufficiently strong to withstand normal usage incidental to transport. Details of packings permitted and any special precautions applicable to particular substances are contained in the Table which follows.

Where packing material is specified in the Table, such packing material must be of sufficient quantity and so disposed as to ensure that the inner container or containers remain completely surrounded under all ordinary conditions of transport.

Where no limit of weight or capacity is specified in the Table there is no restriction on the weight or capacity of packages.

3. Stowage

Generally as regards stowage, the substances are of such a nature that they should be stowed in a dry and easily accessible place. Certain substances may be carried only on deck. Reference should be made to the Table for full details in regard to a particular substance.

4 This Section is intended to cover the carriage of such substances in appreciable quantities Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities

TABLE OF SUBSTANCES WHICH BECOME DANGEROUS BY INTERACTION WITH WATER

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the lesser	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ALUMINIUM FERROSILICON	Evolves hydrogen gas in contact with water, caustic alkalis and acids.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry On or under deck. Away from caustic alkalis and acids	(1) As for cargo ships	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases	—	(2) do.	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do.	G.
		(4) *In lumps or ingots on voyages within Home Trade limits as defined in Section 742, M.S.A., 1894.*	—	—	(4) —	—	(4) do.	(4) do	do	G.
ALUMINIUM HYDRIDE	CHARACTERISTIC PROPERTIES, PACKING, STOWAGE AND LABELLING AS FOR LITHIUM ALUMINIUM HYDRIDE (page 161)									

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53). (10)	Recommended Label or Stencil (11)
ALUMINIUM METAL OR ALLOY (Borings, chips, granules, shavings, unpolished powder). Bars, ingots or sheets are not considered dangerous.	Evolve hydrogen in contact with water. Will react readily with caustic alkalis and mineral acids evolving hydrogen. Finely divided dust, if liberated from broken packages containing powdered aluminium or alloys, is easily ignited by naked lights.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, caustic alkalis and strong supporters of combustion.	(1) As for cargo ships.	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	G.
		(3) Suitable paper bags.	—	1 lb	(3) Packed in hermetically sealed tin-lined wooden cases.	—	(3) do.	(3) do.	do.	G.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	G.
ALUMINIUM POWDERS, POLISHED (treated with oil or wax) for printing and paint purposes.	These powders do not evolve hydrogen when in contact with water at ordinary temperature and are not dangerous in themselves.	—	—	—	—	—	Keep dry. Away from caustic alkalis and acids.	do.	None.	—
ALUMINIUM SILICON in powder form. (Aluminium Silicon in ingot form is not considered dangerous).	In contact with water evolves hydrogen.	As for Aluminium Powder (unpolished).			—	—	—	Not allowed.	5	G.
BARIUM ALLOYS, non-pyrophoric. (For pyrophoric alloys see Section 8).	When containing a substantial proportion of barium rapidly decompose water evolving hydrogen which may ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do.	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1).	(2) do.	do.	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	5 cwt.	(3) do.	(3) do.	do.	G.
BARIUM METAL	Metal which tarnishes in air. Rapidly decomposes water evolving hydrogen which may ignite. Reacts violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1½ lb. Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do.	5	G.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
BARIUM METAL (*Contd.*)		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1).	(2) Not allowed.	5	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	5 cwt.	(3) do	(3) do	do.	G.
BARIUM OXIDE	Solid. Evolves heat in contact with water. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, ammonium compounds, food and foodstuffs.	(1) Under deck.	3	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do	3	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	—	—	(3) do.	(3) do.	3	G.
		(4) Suitable wooden barrels, effectively closed.	—	—	—	—	(4) do	(4) do	3	G.
CALCIUM METAL and ALLOYS (non-pyrophoric). (For pyrophoric alloys see Section 8).	Rapidly decompose water evolving hydrogen which is liable to ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1½ lb.	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb. net per case.	—	(1) Keep dry. On or under deck. Away from acids, strong supporters of combustion and living quarters (see definition (B), page 5).	(1) Not allowed.	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1).	(2) do	do.	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	5 cwt.	(3) do.	(3) do	do.	G.
CALCIUM CARBIDE (Carbide of Calcium).	Solid. In contact with water or aqueous solutions rapidly evolves acetylene, a highly inflammable gas. Reacts vigorously with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, strong supporters of combustion, copper and copper alloys, and living quarters (see definition (B), page 5).	(1) do.	4	G.
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	250 lb.	(3) —	—	(3) do.	(3) do.	do	G.

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Maximum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 533) (10)	Recommended Label or Stencil (11)
CALCIUM CYANAMIDE (Nitrolim) Containing :— (a) Not more than 0·5 % of calcium carbide.	Powder. Usually contains calcium carbide present as an impurity Evolves ammonia and acetylene (highly inflammable gas) in contact with water.	(1) Hessian sacks with a double lining of paper impregnated with tar or twill bags coated with tar internally and lined with strong crepe paper	—	—	(1) —	—	(1) Keep dry. Under deck away from acids Away from living quarters (see definition (B), page 5)	(1) As for cargo ships.	5	—
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—
(b) More than 0·5 % of calcium carbide.		(1) Tins or cans of suitable make, effectively closed.	—	Not more then 2 cwt. per case	(1) Packed in wooden cases.	—	(1) do	(1) do.	4	G.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	2 cwt.	(2) —	—	(2) do.	(2) do.	do.	G.
CALCIUM HYPOCHLORITE (Bleaching Powder, Chloride of Lime). Not exceeding 40 % available Chlorine w/w.	In contact with damp air evolves chlorine gas which, though easily detected by smell, would be dangerous in a confined space. Corrosive when damp.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry On or under deck. Away from acids, ammonium compounds and living quarters (see definition (A), page 5)	(1) do.	5	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material : the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do	—
		(3) Tins or cans of suitable make, effectively closed	—	28 lb	(3) Packed in wooden cases	—	(3) do.	(3) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

							Stowage			
Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	Recommended Label or Stencil (11)
CALCIUM HYPOCHLORITE (*Contd.*)		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) Keep dry. On or under deck. Away from acids, ammonium compounds and living quarters (see definition (A), page 5).	(4) As for cargo ships.	5	—
		(5) Zinc-lined cases, effectively closed.	—	—	(5) —	—	(5) do	(5) do	do.	—
		(6) *For voyages in temperate climates*. Suitable wooden barrels, effectively closed.	—	—	(6) —	—	(6) do.	(6) do	do.	—
CALCIUM HYDRIDE	Greyish white lumps or powder. Reacts with water, acids or moist air with evolution of hydrogen. Burns fiercely when heated.	Steel drums subject to the following conditions. Each steel drum must be made of sheet of not less than ·064 inch thick. It must be watertight and closed with an air and watertight lid. The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable composite seating material carried in the lid. The lid should be securely fastened by an efficient means.	—	1 cwt.	—	—	Keep dry. On deck only. Away from acids, alkalies and external sources of heat.	Not allowed.	3	G
CALCIUM OXIDE (Lime, unslaked; quick lime).	Solid which crumbles and evolves much heat in contact with water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry. On or under deck. Away from ammonium salts	(1) Under deck.	3	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do	do.	—
		(4) Suitable wooden barrels, or suitable fibreboard drums, effectively closed	—	—	(4) —	—	(4) do.	(4) do	do	—
		(5) Hessian bags, effectively closed. On voyages within Home Trade limits as defined in Section 742, M.S.A., 1894	—	—	—	—	(5) do	(5) do.	do	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CALCIUM PHOSPHIDE or articles charged wholly or mainly with calcium phosphide.	Solid In contact with water or damp air readily evolves phosphine. This gas is poisonous and ignites spontaneously in air.	(1) Tins or cans of suitable material, hermetically sealed.	—	28 lb per container. Not more than 1 cwt. per case.	(1) Packed in wooden cases. Not more than 4 tins in each case.	—	(1) Keep dry. On deck (or, in special circumstances, under deck), away from acids, inflammable substances and living quarters (see definition (B), page 5)	(1) Not allowed.	3	G. and A.3
		(2) *In the form of floats, flares, etc*, as specified in Section 1, page 20).	—	—	(2) Packed in wood or metal cases, effectively closed.	—	(2) do.	(2) do.	do.	G. and A.3
CALCIUM SILICIDE	In contact with water gives off hydrogen gas. Calcium carbide may be present as an impurity and acetylene may also be evolved. With acids silicon hydride is formed and this gas may ignite spontaneously in air.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1¼ lb. Not more than 2 cwt. per case	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, inflammable substances and living quarters (see definition (B), page 5)	(1) do.	4	G.
		(2) Tins or cans of suitable make, effectively closed	—	Not more than 2 cwt per case.	(2) Packed in wooden cases	—	(2) On or under deck as for (1).	(2) do.	do.	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	G.
CALCIUM SILICON (Calcium Manganese Silicon)	Liable to evolve inflammable gas when in contact with water. Evolves spontaneously inflammable gas with acids	AS FOR CALCIUM SILICIDE								
COMMERCIAL THERMITE WITHOUT PRIMER consisting of finely divided aluminium and iron oxide only.	MAY BE PACKED, STOWED AND LABELLED AS FOR ALUMINIUM METAL OR ALLOY (BORINGS, CHIPS, GRANULES, SHAVINGS, UNPOLISHED POWDER) (page 155)									
FERRO-ALLOYS With the exception of those listed hereunder, are not dangerous and require no special precautions **FERROSILICON** Containing— (a) up to 18% and above 85% Silicon.	NOT DANGEROUS—NO SPECIAL PRECAUTIONS									

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(*b*) between 18% and 85% Silicon.	In contact with water may evolve phosphine, a poisonous gas, and also hydrogen. Each consignment to be accompanied by a certificate from maker or shipper stating the percentage of Silicon it contains and that, after manufacture it was stored under cover but exposed to the weather in the size in which it is to be packed and shipped for not less than 10 days previous to shipment.	(1) Cases, barrels or drums of suitable material and make, perforated with 4 holes of 1 inch diameter (in order that any gases may escape).	—	—	(1) —	—	(1) Keep dry. On or under deck. Away from caustic alkalis and living quarters (see definition (B), page 5) If stowed under deck :- (*a*) the compartment and any compartment directly below the hold is to be well ventilated. (*b*) any tunnel in the hold is to be well ventilated. (*c*) inflammable substances are not to be stowed in the same hold. (*d*) stowage is to be away from food and foodstuffs.	(1) Not allowed, except between 80% and 85% Silicon as for cargo ships.	4	G.
		(2) Cases, barrels or drums of suitable material and make, effectively closed.	—	—	(2) —	—	(2) Keep dry. On or under deck. Away from caustic alkalis and living quarters (see definition (B) page 5).	(2) do.	4	G.
		(3) Glass or earthenware containers of suitable make, effectively closed.	—	2 lbs	(3) Packed with suitable protective material in wooden cases.	—	(3) do	(3) do	4	G.
		(4) Tins, cans or bags of suitable make, effectively closed	—	—	(4) Packed in wooden barrels or cases	—	(4) do	(4) do.	4	G.

NOTE.—FERROSILICON BRIQUETTES—a mixture of Ferrosilicon with water and a binder such as cement moulded into briquettes—may be regarded as non-hazardous.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
LITHIUM ALUMINIUM HYDRIDE	Light porous white powder. Decomposes to Lithium Hydride, Aluminium Metal and Hydrogen above 130°C. without melting. Burns violently and reacts vigorously with water with evolution of hydrogen gas.	Steel drum subject to the following conditions:- Each steel drum must be made of sheet of not less than ·064 inch thick. It must be watertight and closed with an air and watertight lid. The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable composite seating material carried in the lid. The lid should be securely fastened by an efficient means.	—	1 cwt.	Overkegged by an additional suitable steel drum. The space between the inner and outer container to be packed with a suitable dry inert material.	—	Keep dry. On deck only. Away from acids, alkalis and external sources of heat. Drums to be attached to suitable release gear situated at the after end of the ship and to be immediately jettisoned in the event of fire.	Not allowed.	3	G.
LITHIUM HYDRIDE	Odourless grey lumps or powder. Combustible. Reacts vigorously with water with evolution of hydrogen gas.	AS FOR CALCIUM HYDRIDE (page 143)								
MAGNESIUM ALLOYS OR METAL containing 50% or more Magnesium.										
(*a*) Ingot, bar or stick.	May react with water evolving hydrogen. With salt water the action is more rapid.	(1) Suitable barrels or cases of wood lined or coated internally with waterproof paper or other suitable material, effectively closed.	—	—	(1) —	—	(1) Keep dry. On or under deck. Away from acids and strong supporters of combustion.	(1) As for cargo ships.	4	—
		(2) Sacks made of suitable waterproof material, the ends of which are closed with bitumastic compound and the whole then bound with steel tape or adhesive tape.	—	—	(2) —	—	(2) do.	(2) do.	do.	—
		(3) Ingots, bars or sticks may be carried unwrapped provided, when carried singly, they are not less than 1 cwt. or 50 kilos weight, or, when formed into suitable bundles with banding tape so as to ensure complete rigidity, each one is not less than approximately 23 inches long by 2¼ inches wide by 1¼ inches deep and the whole bundle is not less than 1 cwt. or 50 kilos weight.			—	—	(3) Keep dry. On or under deck. Away from acids alkalies and strong supporters of combustion.	(3) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MAGNESIUM ALLOYS (Contd.)										
(b) Powder	Reacts readily with water evolving hydrogen. Finely divided powder is readily ignited.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids and strong supporters of combustion.	(1) As for cargo ships.	4	G
		(2) Tins or cans of suitable make effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do	do.	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	2 cwt.	(3) —	—	(3) do.	(3) Not allowed.	do	G.
(c) Ribbon, borings, etc.	May react with water evolving hydrogen.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) As for cargo ships	do	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	G.
		(1) Strong tin-lined cases of suitable make, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	G.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do	do.	G.
MAGNESIUM ALUMINIUM PHOSPHIDE		AS FOR CALCIUM PHOSPHIDE								
POTASSIUM METAL.	Metal which tarnishes in air. Reacts violently with water evolving hydrogen. Is liable to take fire when wet. Reacts with acids with great violence.	(1) Packed in mineral oil in glass or earthenware containers of suitable make, effectively closed.	2½%	1½ lb per container	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb. net per case.	—	(1) Keep dry Under deck Away from acids, inflammable substances, strong supporters of combustion and living quarters (see definition (8), page 5)	(1) Not allowed.	3	G.
		(2) Tins or cans of suitable make, hermetically sealed.	—	28 lb.	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. net per case.	—	(2) do.	(2) do.	do.	G
		(3) Steel drums subject to the following conditions:— Each steel drum must be made of sheet of not less than ·064 inch thick. It must be watertight and closed with an air and watertight lid. The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable	—	—	(3) —	4 cwt.	(3) do.	(3) do.	do.	G.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Label or Stencil Recommended (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
POTASSIUM METAL (*Contd.*)		composite seating material carried in the lid. The lid should be securely fastened by an efficient means. (4) Fused solid in steel drums of sheet of not less than ·048 inch thick, effectively closed.	—	—	(4) —	—	(4) Keep dry. Under deck. Away from acids, inflammable substances, strong supporters of combustion and living quarters (see definition (B), page 5).	(4) Not allowed.	3	G.
SODIUM METAL	Metal which tarnishes in air. Reacts violently with water evolving hydrogen. Is liable to take fire when wet. Reacts with acids with great violence.	(1) Packed in mineral oil in glass or earthenware containers of suitable make, effectively closed.	2½%	1¼ lb per container	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb. net per case.	—	(1) Keep dry. Under deck. Away from acids, inflammable substances, strong supporters of combustion and living quarters (see definition (B), page 5).	(1) do.	do.	G.
		(2) Tins or cans of suitable make, hermetically sealed.	—	28 lb	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. net per case.	—	(2) do.	(2) do.	do.	G.
		(3) Steel drums subject to the following conditions: Each steel drum must be made of sheet of not less than ·064 inch thick. It must be watertight and closed with an air and watertight lid. The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable composite seating material carried in the lid. The lid should be securely fastened by an efficient means	—	—	(3) —	4 cwt.	(3) do.	(3) do.	do.	G.
		(4) Fused solid in steel drums of sheet of not less than ·048 inch thick, effectively closed.	—	—	(4) —		(4) do.	(4) do.	do.	G.
SODIUM PHOSPHIDE		AS FOR CALCIUM PHOSPHIDE (Page 159)								

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53).	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM ALLOYS Non-pyrophoric (For pyrophoric alloys see Section 8).	When containing a substantial proportion of Strontium, rapidly decomposes water evolving hydrogen which may ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) As for cargo ships	5	G.
		(2) Tins or cans of suitable make, effectively closed	—	do.	(2) Packed in wooden cases	—	(2) On or under deck as for (1).	(2) Not allowed.	do.	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	do.	(3) —	5 cwt.	(3) do.	(3) do	do.	G.
ZINC ASHES	Liable to give off dangerous gases in contact with water or damp air	(1) Tins or cans of suitable make, effectively closed	—	—	(1) Packed in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, caustic alkalis, strong supporters of combustion and living quarters (see definition (B), page 5).	(1) As for cargo ships.	5	—
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do.	—
		(3) Hessian bags, effectively closed. *Providing a sample of the Zinc Ashes has been submitted and found satisfactory by the Ministry of Transport and Civil Aviation.*	—	—	(3) —	—	(3) do.	(3) do.	do.	—
ZINC POWDER or DUST	Evolves hydrogen in contact with water, damp air or acids and may ignite.	(1) Glass or earthenware containers, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	4	G.
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	G.

SECTION 7

Table A—Strong Supporters of Combustion

(Category (vii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

GENERAL NOTES

1. This Section contains those substances, which, while in themselves not combustible, may liberate oxygen or other gas having similar properties, and thus augment the rapidity and violence of a fire.

2. It will be found that, in addition to the main characteristics of intensifying and supporting combustion, a few of the substances included in this Section also possess to a degree some of the properties classified in other Sections. For this reason it is not possible to prescribe any general form of packing or method of stowage and therefore these requirements are shown in the Table against each substance.

3. Where no limit of weight or capacity is specified in the Table there is no restriction on the weight or capacity of packages.

4. This Section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and medicinal preparations in limited quantities.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 23)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Ammonium Dichromate (Ammonium Bichromate).	Crystals Soluble in water. More easily decomposed by heat than other dichromates. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, food and foodstuffs.	(1) As for cargo ships.	6	—
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do.	(3) do.	do.	—
		(4) Suitable new metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 55)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM DICHROMATE *(Contd.)*		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) On or under deck. Away from all combustible cargo, strong acids food and foodstuffs	(5) As for cargo ships	6	—
		(6) Sound fibreboard drums with a suitable polythene liner, effectively closed.	—	—	—	—	(6) do.	(6) do.	do.	—
BROMATES :—	Similar to chlorates and not less dangerous.									
POTASSIUM BROMATE, SODIUM BROMATE.	Crystals or crystalline powder. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo and strong acids.	(1) Not allowed.	3	F
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F.
		(3) Suitable new metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do.	F
		(4) Tins or cans of suitable make, effectively closed, paper or polythene lined	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do.	F.
CHLORATES	Some mixtures with combustible substances, including powdered metals, are liable to ignite or explode by friction or percussion. Strong acids have a very violent action on these substances and many mixtures of combustible substances and chlorates are set on fire if acted upon by strong sulphuric acid. Should be kept away from ammonium compounds.									F

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM CHLORATE	NOT ALLOWED.									
BARIUM CHLORATE	Crystals or white powder. Soluble in water. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs and powdered metals. Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(1) Not allowed.	3	F and C.
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets with not less than $\frac{1}{4}$ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do.	F and C.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do.	(3) do.	do.	F and C.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see § 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BARIUM CHLORATE (*Contd.*)		(4) Suitable new metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) On or under deck, preferably in a compartment reserved solely for chlorates packed in drums. Such compartment must be thoroughly cleaned of all foreign matter, grit dust, etc., and the packages stowed in such a manner to minimise friction. When this condition cannot be observed the quantity in any one hold must not exceed 10 tons and must be away from all combustible cargo, strong acids, food, foodstuffs and powdered metals	(4) Not allowed.	3	F and C.
CALCIUM CHLORATE	Crystals Soluble in water. Absorbs moisture readily Is usually carried as a solution.	(1) Glass or earthenware containers of suitable make, effectively closed	5%	—	(1) Packed with effective absorbent material in wooden cases	—	(1) On or under deck. Away from all combustible cargo and strong acids.	(1) As for cargo ships	3	F.
		(2) do	5%	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F
		(3) Tins or cans of suitable make, effectively closed	5%	—	(3) Packed with effective absorbent material in wooden cases.	—	(3) do.	(3) do	do.	F
		(4) Suitable metal drums (e.g. steel), effectively closed	5%	—	(4) —	—	(4) do.	(4) do.	do.	F

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
Potassium Chlorate (Chlorate of Potash).	Crystals or powder. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs and powdered metals. Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance, and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(1) Not allowed.	3	F
		(2) do	—	—	(2) Packed singly in— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do.	(3) do.	do.	F.
		(4) Strong wooden cases, paper lined.	—	—	(4) —	—	(4) do.	(4) do	do.	F.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 51) (10)	
POTASSIUM CHLORATE (Chlorate of Potash.) (*Contd.*)		(5) Suitable new metal drums (e.g. steel), effectively closed	—	—	(5) —	—	(5) On or under deck, preferably in a compartment reserved solely for chlorates packed in drums Such compartment must be thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction When this condition cannot be observed the quantity in any one hold must not exceed 10 tons and must be away from all combustible cargo, strong acids, food, foodstuffs and powdered metals	(5) Not allowed.	3	F
SODIUM CHLORATE (Chlorate of Soda)	Crystals. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs and powdered metals Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(1) do	3	F

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM CHLORATE (*Contd.*)		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs and powdered metals. Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(2) Not allowed.	3	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do.	(3) do.	do.	F.
		(4) Suitable new metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) On or under deck, preferably in a compartment reserved solely for chlorates packed in drums Such compartment must be thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction. When this condition cannot be observed the quantity in any one hold must not exceed 10 tons and must be away from all combustible cargo, strong acids, food, foodstuffs and powdered metals.	(4) do.	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM CHLORATE	Crystals or powder. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo strong acids, food, foodstuffs and powdered metals. Not more than a total of 10 tons of all chlorates in any one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorized by the Ministry of Transport and Civil Aviation.	(1) Not allowed.	3	F.
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do.	(3) do.	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM CHLORATE (*Contd.*)		(4) Suitable new metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) On or under deck, preferably in a compartment reserved solely for chlorates packed in drums. Such compartment must be thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction. When this condition cannot be observed the quantity in any one hold must not exceed 10 tons and must be away from all combustible cargo, strong acids, food foodstuffs and powdered metals	(4) Not allowed.	3	F
ZINC CHLORATE	Crystals. Becomes damp when exposed to air. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck Away from all combustible cargo, strong acids, food, foodstuffs and powdered metals. Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(1) do.	3	F

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZINC CHLORATE (*Contd.*)		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) On or under deck. Away from all combustible cargo strong acids, food, foodstuffs and powdered metals Not more than a total of 10 tons of all chlorates may be carried in one hold. If, however, a compartment in a cool part of the ship is reserved for this substance and such compartment is thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction, the limit of 10 tons in any one hold may be exceeded if authorised by the Ministry of Transport and Civil Aviation.	(2) Not allowed.	3	F
		(3) Tins or cans, galvanised internally, of suitable make, effectively closed	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do	F.
		(4) Iron or steel barrels or drums, galvanised internally, of suitable make, effectively closed.	—	—	(4) —	—	(4) On or under deck, preferably in a compartment reserved solely for chlorates packed in drums. Such compartment must be thoroughly cleaned of all foreign matter, grit, dust, etc., and the packages stowed in such a manner to minimise friction. When this condition cannot be observed the quantity in any one hold must not exceed 10 tons and must be away from all combustible cargo, strong acids, food, foodstuffs and powdered metals.	(4) do	do.	F

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Chloric Acid (not exceeding 10% Solution).	In strong solutions gives off chlorine and oxygen.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with effective inorganic absorbent material, such as kieselguhr or exfoliated vermiculite, in wooden cases	—	(1) On deck only Away from organic substances, combustible cargo and strong acids.	(1) Not allowed.	3	F.
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do.	F
Chlorites :—	Finely divided organic or metallic substances if mixed with this material are highly inflammable and may be ignited by friction.									
Calcium Chlorite, Sodium Chlorite.	Crystals or crystalline powder Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, powdered metals and strong acids.	(1) do.	3	F.
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets , or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do	F.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHROMIUM TRIOXIDE (Chromic Acid, Solid)	Poisonous and corrosive. When wet may cause fire in contact with combustible substances.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases. The protective material may consist of kieselguhr, whiting or an intimate mixture of coarse exfoliated vermiculite and whiting consisting of 70% to 80% whiting by weight and 20% to 30% exfoliated vermiculite by weight, or other substance approved by the Ministry of Transport and Civil Aviation	—	(1) On or under deck. Away from combustible cargo, food and foodstuffs	(1) As for cargo ships.	4	F
		(2) Suitable metal drums (e.g. steel), such lined or coated internally with lead or other suitable material, effectively closed.	—	—	(2) —	—	(2) do.	(2) do.	do.	F
		(3) Suitable heavy gauge steel drums, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	F
NITRATES :—	Will render certain substances easily inflammable.									
AMMONIUM NITRATE, free from added organic matter other than of a nature and within a limit approved by the Ministry of Transport and Civil Aviation.	Crystals Soluble in water. In temperatures above 400°F rapid decomposition may occur with evolution of heat and poisonous gas. Forms an explosive mixture when mixed with certain organic materials. A declaration must be furnished certifying that the substance does not contain added organic matter other than of a nature and within a limit approved by the Ministry of Transport and Civil Aviation.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable inorganic protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo and strong acids.	(1) do.	3	F
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable inorganic protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	F
Note: The following may be regarded as non-hazardous :— (1) Agricultural Ammonium Nitrate containing not less than 40% inert matter such as chalk or limestone; (2) Ammonium Sulphate Nitrate Mixture or Compound containing equimolecular proportions of Ammonium Sulphate and Ammonium Nitrate.		(7) Suitable polythene bags, effectively closed.	—	—	(3) Packed in wooden cases with suitable inorganic protective material. Not more than 1 cwt. per case.	—	(3) do.	(3) do.	do.	F

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM NITRATE (*Contd.*)		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases	—	(4) On or under deck. Away from all combustible cargo and strong acids.	(4) As for cargo ships.	3	F.
		(5) Suitable new metal drums (e.g. steel), effectively closed, which may or may not be lined with a suitable material, or coated internally with suitable paint or lacquer.	—	—	(5) —	—	(5) do.	(5) do.	do.	F.
		Other mixtures containing added organic material (other than Authorised Explosives) are not allowed.								
BARIUM NITRATE	Crystals or crystalline powder. Soluble in water. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(1) do.	6	F and C.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	F and C.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	F and C
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do.	F and C.
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	F and C.
		(6) Paper-lined wood or fibreboard casks or kegs of suitable make, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	F and C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 51)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
GUANIDINE NITRATE	Crystals or granules Soluble in water	AS FOR AMMONIUM NITRATE								
LEAD NITRATE	Crystals or crystalline powder Soluble in water. Poisonous	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs	(1) As for cargo ships	6	F.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets , or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do.	F.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	F
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed in wooden cases	—	(4) do.	(4) do.	do.	F.
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do	F
		(6) Paper lined wood or fibreboard casks or kegs of suitable make, effectively closed.	—	—	(6) —	—	(6) do	(6) do.	do.	F.
POTASSIUM NITRATE (Saltpetre).	Granules or crystalline powder Soluble in water	Hessian sacks or other suitable containers.	—	—	—	—	On or under deck. Away from all combustible cargo, powdered metals and strong acids.	do.	6	—
SODIUM NITRATE (Chile Saltpetre).	Crystalline lumps or powder Soluble in water	Sacks or other suitable containers	—	—	—	—	do.	do.	6	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships (and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater)	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM NITRATE	Crystals or crystalline powder. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(1) As for cargo ships	6	—
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do	do	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do	(5) do.	do.	—
		(6) Paper-lined wood or fibreboard casks or kegs of suitable make, effectively closed	—	—	(6) —	—	(6) do	(6) do.	do.	—
NITRITES :— POTASSIUM NITRITE, SODIUM NITRITE.	Crystals or sticks. Decompose in contact with acids, evolving fumes of oxides of nitrogen. Involved in a fire, will intensify the burning of all combustible materials	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates and cyanides.	(1) do.	5	F
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or	—	(2) do.	(2) do.	do.	F

(continued overleaf)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
Potassium Nitrite, Sodium Nitrite (*Contd.*)					(c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate of hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates and cyanides	(3) As for cargo ships	5	F.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(4) do	(4) do.	do	F.
		(5) Tins or cans of suitable make, effectively closed	—	—	(5) Packed in wooden cases	—	(5) do	(5) do	do	F.
		(6) Suitable metal drums (e.g. steel), effectively closed.	—	—	(6) —	—	(6) do	(6) do	do.	P.
Perborates.— Sodium Perborate (except the Tetrahydrate, which is regarded as non-hazardous)	Powder.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from strong acids.	(1) do	6	—
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weigh of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM PERBORATE (Contd.)		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) On or under deck. Away from strong acids.	(3) As for cargo ships.	7	—
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do	do	—
		(5) Sound hardwood casks or barrels of suitable make, effectively closed, or fibreboard containers approved by the Ministry of Transport and Civil Aviation	—	—	(5) —	—	(5) do.	(5) do.	do.	—
PERCHLORATES :—	Will render organic substances easily inflammable. When mixed with finely divided organic matter or finely divided metals, may become explosive.									
AMMONIUM PERCHLORATE	Powder.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, powdered metals and strong acids	(1) Not allowed.	3	F.
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets with not less than ¼ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do.	F.
		(4) Suitable new metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do	(4) do.	do.	F.
BARIUM PERCHLORATE	Crystals or powder. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(1) do	4	F and C
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or	—	(2) do.	(2) do.	do.	F and C.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions in stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BARIUM PERCHLORATE (*Contd.*)					(*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(3) Not allowed.	4	F and C.
		(4) Suitable new metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do	do.	F and C.
CALCIUM PERCHLORATE	Crystals or powder.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck Away from combustible cargo, strong acids and powdered metals.	(1) Not allowed.	4	F
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do.	F
		(4) Suitable new metal drums (e.g steel), effectively closed	—	—	(4) —	—	(4) do	(4) do.	do	F
LEAD PERCHLORATE	Crystals or powder Poisonous	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from combustible cargo, strong acids, powdered metals, food and foodstuffs	(1) do.	4	F and C.
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or	—	(2) do	(2) do.	do.	F and C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
LEAD PERCHLORATE (*Contd.*)					(*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed in wooden cases.	—	(3) On or under deck. Away from combustible cargo, strong acids, powdered metals, food and foodstuffs.	(3) Not allowed.	4	F and C.
		(4) Suitable new metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do.	F and C.
MAGNESIUM PERCHLORATE, POTASSIUM PERCHLORATE, SODIUM PERCHLORATE.	Crystals or powder.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, powdered metals and strong acids.	(1) Not allowed.	4	F.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do.	(3) do.	do.	F.
		(4) Suitable new metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	F.
NOTE: Potassium Perchlorate may be packed in strong wooden cases, paper lined.										
PERMANGANATES :—	Mixed with combustible materials are liable to ignition by friction and to take fire if acted upon by Sulphuric Acid or Hydrogen Peroxide.									

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
AMMONIUM PERMANGANATE	Crystals or powder. Soluble in water. Dry salt is explosive at 60° C. (140° F.) Is liable to explode when rubbed.	NOT ALLOWED								
BARIUM PERMANGANATE.	Crystals or powder. Soluble in water. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, powdered metals, strong acids, hydrogen peroxide, food and foodstuffs.	(1) As for cargo ships.	4	F and C.
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F and C.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) do.	(3) do.	do.	F and C.
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases.	—	(4) do	(4) do.	do.	F and C.
		(5) Suitable metal drums (e.g. steel), effectively closed	—	—	(5) —	—	(5) do.	(5) do	do.	F and C.
		(6) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	F and C
CALCIUM PERMANGANATE	Crystals or powder. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals and hydrogen peroxide.	(1) do.	4	F.
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or	—	(2) do.	(2) do.	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CALCIUM PERMANGANATE (Contd.)					(b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, powdered metals and hydrogen peroxide.	(3) As for cargo ships.	4	F
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases	—	(4) do.	(4) do	do	F
		(5) Suitable metal drums (e.g. steel), effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	F.
		(6) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do	F.
POTASSIUM PERMANGANATE. SODIUM PERMANGANATE.	Crystals or powder. Soluble in water Has been known to cause fire when in contact with glycerol (including anti-freeze compounds).	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids, glycerol and other anti-freeze compounds, powdered metals and hydrogen peroxide	(1) do.	4	F
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do	(2) do.	do.	F.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are entitled to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
POTASSIUM PERMANGANATE SODIUM PERMANGANATE (*Contd.*)					(c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, glycerol and other anti-freeze compounds, powdered metals and hydrogen peroxide.	(3) As for cargo ships.	4	F.
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do.	F.
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do.	(5) do	do.	F.
		(6) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(6) —	—	(6) do.	(6) do	do.	F.
ZINC PERMANGANATE	Crystals becoming damp on exposure to air. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs and hydrogen peroxide.	(1) do.	4	F.
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter	—	(2) do.	(2) do	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance*	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZINC PERMANGANATE (*Contd.*)					of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs and hydrogen peroxide.	(3) As for cargo ships.	4	F.
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed in wooden cases	—	(4) do	(4) do.	do	F
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do	(5) do	do	F
PEROXIDES :—	May cause ignition of organic material									
BARIUM PEROXIDE (Barium Binoxide, Barium Dioxide, Barium Superoxide)	Powder	(1) Glass or earthenware containers of suitable make, effectively closed.	—	7 lb per container. Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs	(1) do	4	F
		(2) Tins or cans of suitable make, effectively closed	—	56 lb per container. Not more than 2 cwt per case.	(2) Packed in wooden cases	—	(3) do	(2) do	do	F
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	F
CALCIUM PEROXIDE (Calcium Superoxide).	Powder. Slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	7 lb per container. Not more than 1 cwt per case	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids and powdered metals	(1) do	4	F.
		(2) Tins or cans of suitable make, effectively closed	—	56 lb per container. Not more than 2 cwt. per case.	(2) Packed in wooden cases	—	(2) do	(2) do	do.	F
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDROGEN PEROXIDE										
(a) Solutions of a strength guaranteed to be not greater than 6% (20 vols.)		Not dangerous—no special precautions								
(b) Solutions of a strength greater than 6% and not exceeding 40% (133 vols.)	As used in commerce is a liquid. Its oxidising properties are great and its rate of decomposition increases rapidly with a rise in temperature. Should a package break, a hose should be immediately played upon it to prevent the liquid drying in its concentrated state on wood or any fibrous material.	(1) For properly stabilised solutions of strength not greater than 40% glass, earthenware or suitable plastic containers of suitable make, effectively closed	10%	5 pints	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck, away from all sources of heat. It must not be stowed in proximity to permanganates, hypochlorites, powdered metals or organic liquids.	(1) Not allowed.	4	F
		(2) Glass, earthenware or suitable plastic containers of suitable make, fitted with pressure relief valve or vent.	10%	2½ gal.	(2) do	—	(2) do.	(2) do	do.	F
		(3) Glass or earthenware containers of suitable make, fitted with pressure relief valve or vent.	10%	15 gal.	(3) Packed singly in — (a) wicker hampers with wicker bonnets ; or	—	(3) (a) On or under deck away from all sources of heat. It must not be stowed in proximity to permanganates hypochlorites, powdered metals or organic liquids	(3) (a) Not allowed	do.	F
					(b) strong iron hampers with iron bonnets with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or	—	(b) do.	(b) do.	do.	F
					(c) wooden cases with suitable protective material.	—	(c) do.	(c) do.	do.	F.
		(4) "Aluminium drums" or barrels suitably vented and approved by the Ministry of Transport and Civil Aviation.	5%	40 gal.	(4) —	—	(4) do.	(4) do.	do.	F.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDROGEN PEROXIDE (*Contd*) (*c*) Solutions greater than 40% strength but not exceeding 60% strength by weight, suitably stabilised		(1) Glass containers of suitable make fitted with a pressure relief valve.	33⅓%	5 pints	(1) Packed with Kieselguhr free from organic matter in wooden or steel cases. The bottles to be so surrounded that in the event of spillage or breakage, all the liquid will be satisfactorily absorbed no matter in which position the cases are stowed. Not more than 4 gal. of liquid in each case.	—	(1) On or under deck, away from all sources of heat. It must not be stowed in proximity to permanganates, hypochlorites, powdered metals and organic liquids. Not to be overstowed.	(1) Not allowed.	do.	F
		(2) Polythene bottles of suitable make, effectively sealed.	33⅓%	5 pints	(2) do.	—	(2) do.	(2) do.	do.	F
		(3) Aluminium drums or barrels suitably vented and approved by the Ministry of Transport and Civil Aviation.	5%	40 gal	(3) —	—	(3) do.	(3) do.	do.	F.
(*d*) Solutions of a strength greater than 60%.		May be shipped only by permission of the Ministry of Transport and Civil Aviation								
LEAD PEROXIDE (Lead Dioxide)	Dark brown powder, insoluble in water. Evolves oxygen when heated. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck Away from all combustible cargo strong acids, powdered metals, food and foodstuffs	(1) As for cargo ships.	4	F.
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb. containers Not more than 2 cwt. per case.	(2) Packed in wooden cases	—	(2) do.	(2) do.	do.	F
		(3) Suitable metal drums (e.g. steel) effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	F.
MAGNESIUM PEROXIDE (containing not more than 30% Magnesium Peroxide).	Powder. Insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck Away from all combustible cargoes and strong acids	(1) As for cargo ships.	4	F.
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb	(2) Packed in wooden cases	—	(2) do	(2) do.	do.	F.
		(3) Sound fibreboard drums with a suitable plastic lining, effectively closed.	—	1 cwt.	(3) —	—	(3) do	(3) do.	do.	F.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MAGNESIUM PEROXIDE (*Contd.*)		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) On or under deck Away from all combustible cargoes and strong acids	(4) As for cargo ships	4	F
		(5) Suitable wooden barrels, effectively closed.	—	—	(5) —	—	(5) do	(5) do	do	F
POTASSIUM PEROXIDE.	Amorphous mass. Decomposes in water evolving oxygen	(1) Glass or earthenware containers of suitable make, effectively closed	—	7 lb per container. Not more than 1 cwt. per case	(1) Packed with suitable protective material in tin-lined wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids and powdered metals	(1) On deck only.	4	F
		(2) Tins or cans of suitable make, effectively closed	—	56 lb per container Not more than 2 cwt per case.	(2) Packed in wooden cases	—	(2) do	(2) do	do.	F
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do.	F
SODIUM PEROXIDE (Sodium Binoxide, Sodium Dioxide, Sodium Superoxide, Oxone)	Powder. Soluble in water developing great heat. Will cause ignition of inflammable liquids, particularly in the presence of water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	7 lb per container Not more than 1 cwt. per case.	(1) Packed with suitable protective material in tin-lined cases	—	(1) do	(1) do	3	F
		(2) Tins or cans of suitable make, hermetically sealed	—	56 lb per container Not more than 3 cwt. per case.	(2) Packed in wooden cases	—	(2) do	(2) do.	do	F
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do	do.	F
STRONTIUM PEROXIDE (Strontium Dioxide).	Powder. Decomposed by hot water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck Away from all combustible cargo, powdered metals and strong acids	(1) As for cargo ships	4	F
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb per container Not more than 2 cwt per case.	(2) Packed in wooden cases	—	(2) do.	(2) do	do.	F
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do	do.	F

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
UREA HYDROGEN PEROXIDE (Hydrogen Peroxide Solid)	Crystallised solid which decomposes at about 140° F (60° C.) with the formation of urea, water and oxygen.	(1) Glass bottles fitted with vented corks	—	1½ lb	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck.	(1) As for cargo ships	6	—
		(2) Glass bottles, effectively sealed with screw caps	50%	1½ lb. (500 g)	(2) do.	—	(2) do.	(2) do	do.	—
		(3) Earthenware jars fitted with waxed and vented corks	—	18 lb.	(3) do.	—	(3) do.	(3) do	do.	—
ZINC PEROXIDE	Powder. Insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids and powdered metals	(1) do	4	F
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb. per container. Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) do.	(2) do	do	F
		(3) Sound fibreboard drums with a suitable plastic lining, effectively closed.	—	1 cwt.	(3) —	—	(3) do.	(3) do.	do	F.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	F.

SECTION 7 (*Cont.*)

(Category (x) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Table B—Readily Combustible Solids

GENERAL NOTES

1. The substances contained in this Section, while possessing the main characteristics of being readily combustible will be found in a few cases also to possess in some degree the properties possessed by substances classified in other sections.

2. Since the properties of the substances in this Section vary so widely it is impossible to prescribe any general form of packing or method of stowage and therefore these requirements are given in the Table against each substance. In certain instances which are specified in the Table the substances should be stowed in a readily accessible position.

3. Where no limit of weight or capacity is specified in the Table there is no restriction on the weight or capacity of the packages.

4. This Section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and medicinal preparations in limited quantities.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
CELLULOID (Pyroxylin, Xylonite, etc.), excluding bicycles, cutlery, tools and similar articles having handles or other fitments of celluloid fixed to them	Very readily inflammable. If combustion takes place in a confined space, products of combustion are formed which are both poisonous and inflammable.	Suitable wooden cases.	—	—	—	—	On or under deck.	As for cargo ships.	3	E.
CELLULOID SCRAP, STRIPPED FILM, DUST, SHAVINGS, PIECES, etc. (Pyroxylin, Xylonite scraps, dust, shavings, pieces, etc.).	Trimmings, clippings and other waste obtained in the manufacture of celluloid manufactured articles. Being finely divided is more hazardous than the original materials.	(1) Tins or cans of suitable make, effectively closed. (2) Zinc- or tin lined cases of suitable make, effectively closed. (3) Suitable metal drums (e.g. steel), effectively closed.	— — —	— — —	(1) Packed in wooden cases. (2) — (3) —	— — —	(1) On deck only (2) do. (3) do.	(1) Not allowed. (2) do. (3) do	3 do. do.	E. E. E.
COLD STARTERS (used for starting oil engines).	Combustible material containing its own source of oxygen.	Tins or cans of suitable make, hermetically sealed. *Not more than* 150 *starters in each tin.*	—	—	In a felt-lined strong wooden case *Not more than* 10 *tins in each case.*	—	On or under deck.	As for cargo ships.	4	E.
FILMS (Nitrocellulose base). *Note: Non-flam Films may be carried without restriction.*	Very readily inflammable. If combustion takes place in a confined space poisonous and inflammable gases are given off.	Zinc- or tin-lined cases of suitable make, effectively closed. If packed with other material which is non-inflammable, and if each film is contained in a separate tin, the zinc or tin lining of the outside case is not required.	—	—	—	—	On or under deck.	do.	3	E.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FIRE LIGHTERS	Usually manufactured from peat, wood shavings or sawdust and a high flash point mineral oil, or naphthalene. Very readily combustible.	Wrapped and packed in cartons of stout cardboard or in wooden cases	—	—	—	—	On or under deck.	As for cargo ships	4	E.
HEXAMINE (Hexamethylenetetramine, Metramine, Uritone, Urotropine).	Crystalline solid. Soluble in water Readily ignites in contact with a flame	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) do	6	E.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases	—	(2) do.	(2) do.	do.	E.
		(3) Suitable barrels or cases of wood or fibreboard, effectively closed.	—	—	(3) —	—	(3) do	(3) do.	do.	E.
		(4) Fibreboard cartons of suitable make, effectively sealed, and dipped in a high melting point wax, then wrapped in wax paper.	—	8 oz.	(4) Packed in wooden cases	—	(4) do	(4) do.	do.	E
		(5) 5 ply paper bags with suitable waterproof linings, effectively closed.	—	—	(5) Packed in jute outer bags	—	(5) do.	(5) do	do	E.
LACQUER BASE and CHIPS (if nitrocellulose base).	Readily combustible. If combustion takes place in a confined space, poisonous and inflammable gases are given off.	Suitable metal drums (e.g. steel), effectively closed	—	—	—	—	On deck only	Not allowed	4	E.
MATCHES, BENGAL	Intended to produce coloured light when burning.	Matches to be wrapped in paper before being placed in the box. 15 matches in a box.	—	—	1 dozen boxes in a paper jacket. 10 gross boxes in a tin box. 3 tin boxes in a strong wooden case.	—	In a readily accessible space.	As for cargo ships	4	E.
MATCHES, SAFETY	Intended to be ignited on a specially prepared surface containing red phosphorus.	(1) Firmly done up in packages of not more than one dozen boxes	—	—	(1) Packed in :— (*a*) Strongly made wooden cases lined inside with strong paper, zinc or tinplate	(1) (*a*) 400 lbs. When more than 275 lbs., cases must be fitted on the outside with strengthening battens round the	In a readily accessible space.	As for cargo ships.	4	—

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MATCHES, SAFETY (*Contd.*)						cases or special stiffening of the ends				
					(*b*) Metal cases specially approved by the Ministry of Transport and Civil Aviation.	(*b*) 45 lbs.	In a readily accessible space.	(5) As for cargo ships.	4	—
					(*c*) Fibreboard containers specially approved by the Ministry of Transport and Civil Aviation.	(*c*) 45 lbs.	do.	do.	4	—
MATCHES, NON-SAFETY	Matches for the ignition of which a specially prepared surface is not required.	(1) Firmly done up in packages of not more than one dozen boxes	—	—	(1) Packed in (*a*) Strongly made wooden cases lined inside with strong paper, zinc or tinplate.	(1) (*a*) 150 lbs	In a readily accessible space.	As for cargo ships	4	—
					(*b*) Metal cases specially approved by the Ministry of Transport and Civil Aviation.	(*b*) 45 lbs.	do	do	4	—
					(*c*) Fibreboard containers specially approved by the Ministry of Transport and Civil Aviation	(*c*) 45 lbs.	do.	do.	4	—
BOOKLET MATCHES	Intended to be ignited on a specially prepared surface as in the case of Safety Matches. Matches are stitched in or fastened to a cover or folder.	(1) Firmly done up in cartons of not more than 50 booklets.	—	—	As (1)(*a*), (*b*) or (*c*) above.	(1) (*a*) 100 lb (*b*) 35 lb (*c*) 35 lb	In a readily accessible space.	As for cargo ships.	4	—
METALDEHYDE	Powder or moulded tablets. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) —	—	(1) Under deck. Away from food and foodstuffs.	(1) As for cargo ships.	6	E.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) —	—	(2) do	(2) do.	do.	E.
		(3) Suitable drums or cases of wood or fibreboard, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	E.
MISCHMETALL (Powder).	Liable to ignite spontaneously. Evolves hydrogen in contact with water or moist air.	Tins or cans of suitable make, effectively closed	—	—	Packed in wooden cases	75 lb.	On deck under cover. Away from all combustible cargo and strong acids.	Not allowed.	4	E.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MISCHMETALL (Slabs or ingots)	Emits sparks when scratched or struck. Evolves hydrogen in contact with water or moist air	(1) Tins or cans of suitable make, effectively closed.	—	2 cwt.	(1) Packed in wooden cases	—	(1) On or under deck. Not in the same hold or compartment as inflammable substances or strong supporters of combustion	(1) As for cargo ships.	4	—
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do	—
		(3) Suitable barrels or cases of wood, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	—
NAPHTHALENE, CRUDE OR REFINED (Creosote Salts) (a) Melting Point below 75° C. (167° F.).	Inflammable. Strong tarry smell.	Sound drums or hard or plywood casks of suitable make, effectively closed.	—	—	—	—	On or under deck. If on deck protected by suitable fireproof material	do	6	E.
(b) Melting Point 75° C (167° F) and above (e.g. Moth Balls).		(1) Sound drums or hard or plywood casks of suitable make, effectively closed.	—	—	(1) —	—	(1) do.	(1) do.	do	E.
		(2) Strong, closely woven bags of suitable make, effectively closed	—	—	(2) —	—	(2) do	(2) do.	do.	E
		(3) 4-ply paper bags, effectively closed.	—	—	(3) Packed in hessian outer bags.	—	(3) do.	(3) do.	do.	E.
		(4) 2-ply Kraft paper bags, effectively closed.	—	—	(4) do.	—	(4) do.	(4) do.	do.	E.
		(5) Double hessian sacks, effectively closed	—	—	(5) —	—	(5) do.	(5) do.	do.	E.
		(6) Fibreboard cases of suitable make, effectively closed.	—	56 lb	(6) —	—	(6) do.	(6) do.	do.	E.
PHOSPHORUS AMORPHOUS (Red Phosphorus)	Powder Readily ignited by friction Insoluble in water. In the case of fire, fumes given off by this substance are irritating and suffocating.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	28 lb. per container. Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from strong supporters of combustion.	(1) do.	4	E.
		(2) Tins or cans of suitable make, effectively closed.	—	do.	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	E.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	E.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOTOGRAPHIC FLASHLIGHT POWDERS in which the oxidising agent is segregated from the metallic constituents. Shipment of photographic flashlight powders containing chlorates perchlorates or permanganates even if so segregated is not permitted.	Readily combustible.	Tins or cans of suitable material and make, effectively closed.	—	—	Packed in wooden cases.	—	On deck only. In the open.	As for cargo ships.	4	E
PLASTICISED NITRO-CELLULOSE FLAKES with not less than 18% dibutyl phthalate plasticiser.	Readily combustible. If combustion takes place in a confined space, poisonous and inflammable gases are given off.	(1) Wooden containers of suitable make, effectively closed and suitably lined with metal or plastic.	—	—	—	—	(1) On deck only	(1) Not allowed.	4	E.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	—	—	(2) do.	(2) do	do.	E.
SILICON POWDER	Combustible and forms readily inflammable mixture with supporters of combustion.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	2 cwt.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Not to be stowed in the same compartment as strong supporters of combustion.	(1) As for cargo ships.	6	E.
		(2) Tins or cans of suitable make, effectively closed	—	do.	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	E.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	E.
SULPHUR (Lump, roll or stick) (*Note*.—The remarks set out under the entry for Sulphur (Powder) on Page 197 apply to this entry also).	Will burn giving off sulphur dioxide, a suffocating gas.	(1) In bulk.	—	—	(1) —	—	(1) —	(1) Not allowed.	3	—
		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases	—	(2) On or under deck. Not in the same hold as inflammable liquids and strong supporters of combustion.	(2) As for cargo ships.	6	E.
		(3) Drums, casks or cases of suitable make, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	E.
		(4) Double hessian bags, effectively closed.	—	2 cwt.	(4) —	—	(4) do.	(4) do.	do.	E.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SULPHUR (powder) (Flowers of Sulphur).	Will burn giving off sulphur dioxide, a suffocating gas. Easily ignited by sparks.	(1) In bulk.	—	—	(1) —	—	(1) —	(1) Not allowed.	3	—
		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases.	—	(2) On or under deck. Not in the same hold as inflammable liquids and strong supporters of combustion.	(2) As for cargo ships.	6	E.
		(3) Drums, casks or cases of suitable make, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	E.
		(4) Hessian bags, effectively closed.	—	2 cwt.	(4) Packed in 4-ply paper bags, inside hessian outer bags	—	(4) As for (2). Loading trays should be used.	(4) Not allowed.	do.	E.
		(5) 5-ply paper bags, effectively closed	—	2 cwt.	(5) Packed in hessian outer bags	—	(5) As for (2).	(5) do.	do.	E.
		(6) Double crepe paper inner sacks	—	2 cwt.	(6) Packed in hessian outer sacks with crepe paper lining attached to the inside of the sack with adhesive, the two sacks to be folded separately at the mouths and tied with string the end of which is to be doubled back and retied	—	(6) As for (2).	(6) do.	do.	E.
		(7) 3-ply paper bags, effectively closed.	—	1 cwt.	(7) Packed in hessian outer bags.	—	(7) As for (2)	(7) do.	do.	E.
		(8) Paper bags, effectively closed.	—	56 lb	(8) Suitable paper lined fibreboard cartons, effectively closed.	—	(8) As for (2)	(8) As for cargo ships.	do.	E.
		(9) Double paper bags, effectively closed.	—	56 lb	(9) Suitable fibreboard cartons, effectively closed.	—	(9) As for (2)	(9) do.	do.	E.
TITANIUM HYDRIDE POWDER	PACKING, STOWAGE AND LABELLING AS FOR ZIRCONIUM METAL (DRY).									
WOOD SHAVINGS OR WOOD WOOL, dry, clean and free from oil.	Small fragments or dust or long fine curled wood shavings. Hazard lies in its susceptibility to fire from open flame or sparks.	(1) Bales, slatted and completely bound with wire or metal bands.	—	—	(1) —	—	(1) On or under deck. Away from strong supporters of combustion and strong acids.	(1) As for cargo ships.	4	—
		(2) Any suitable container.	—	—	(2) —	—	(2) do.	(2) do.	do.	—
ZIRCONIUM HYDRIDE POWDER.	PACKING, STOWAGE AND LABELLING AS FOR ZIRCONIUM METAL (DRY).									
ZIRCONIUM METAL (Dry).	Inflammable. Amorphous brittle hard lustrous lumps or powder. Insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On deck under cover. Away from all combustible cargo and strong acids.	(1) Not allowed.	4	E.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	75 lb	(2) do.	(2) do.	do.	E.

Note A cargo of bulk sulphur has a liability to dust explosion. Such an explosion may also occur during cleaning after discharge of the cargo. The danger may be avoided by preventing the atmosphere from becoming laden with fine sulphur particles—by adequate ventilation, or when cleaning is necessary, by hosing down instead of sweeping. Care should be taken to avoid sparks and the use of naked lights.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 23)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZIRCONIUM METAL (Wet)	The above material either wetted with water or in water. This powder, if allowed to dry out, may spontaneously inflame on exposure to air.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On deck under cover. Away from all combustible cargo and strong acids.	(1) Not allowed.	3	E.
		(2) Watertight wooden casks or barrels, effectively closed.	—	75 lb. per container	(2) —	—	(2) do.	(2) do.	do	E.
		(3) Watertight wooden cases, effectively closed.	—	150 lb. per container	(3) —	—	(3) do.	(3) do	do	E.

SECTION 8

(Category (viii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Substances Liable to Spontaneous Combustion and Substances Which Become Dangerous by Interaction With Air

GENERAL NOTES

1 This Section comprises such substances as are liable to spontaneous heating under certain conditions of stowage or to heat up in contact with air.

2 These substances are so varied in nature that it is not possible to prescribe a general form of packing or stowage method and therefore these requirements have been indicated against each substance in the Table All such substances should be stowed away from readily inflammable cargo, strong supporters of combustion and strong acids.

3 Where no limit of weight or capacity is specified in the Table there is no restriction on the weight or capacity of packages.

4 This Section is intended to cover the carriage of such substances in appreciable quantities Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 33)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ASPHALT FELT, ASPHALT CLOTH (Saturated Roofing Felt and Dampcourses) containing drying oils.	Liable to spontaneous combustion.	Rolls.	—	—	—	—	On or under deck May only be carried if a certificate is obtained from the manufacturer that the material has been allowed to dry properly and to harden.	As for cargo ships.	4	—
Note · Felts not containing drying oils are non-dangerous.										
BARIUM ALLOYS (pyrophoric)	May produce sparks on being shaken in the container. React with water to form hydrogen, causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in tin-lined wooden cases.	—	(1) Under deck. Away from inflammable liquids.	(1) do	3	H.
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed.	—	—	(2) Packed in tin-lined wooden cases.	—	(2) do.	(2) do.	do.	H.
		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	—	—	(3) —	—	(3) do.	(3) do	do.	H.
BRATTICE CLOTH (Tarred)	Liable to spontaneous combustion.	Rolls or bales.	—	—	—	—	On or under deck May only be carried if a certificate is obtained from the manufacturer that the material has been allowed to dry properly and to harden	do.	4	—
CALCIUM ALLOYS (pyrophoric)	May produce sparks on being shaken in the container. Reacts with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make effectively closed.	—	—	(1) Packed with suitable protective material in tin-lined wooden cases	—	(1) Under deck. Away from inflammable liquids.	(1) do.	3	H.
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed.	—	—	(2) Packed in tin-lined wooden cases	—	(2) do.	(2) do.	do.	H.
		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CARBON or CHARCOAL.	Obtained by incomplete combustion of vegetable or animal matter. It is either in the form of very fine powder or in heavy grains, lumps or sticks. There is a possibility of spontaneous combustion of vegetable charcoal and it should have been exposed to air for at least 8 days after being manufactured. There is also the risk of a dust explosion if powder is disseminated in an air space. Shipment of wet or oil contaminated material is not permitted.									
CARBON or CHARCOAL of VEGETABLE ORIGIN including ACTIVATED CARBON or CHARCOAL, DECOLORISING CARBON or CHARCOAL, VINE BLACK, WOOD CHARCOAL. (For LAMP BLACK, see page 206)	For packings 3–7 a declaration is required from the makers that the substance has been exposed to the air for 8 days after grinding.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from strong supporters of combustion and oily matter.	(1) As for cargo ships	4	H.
		(2) Suitable polythene bags, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(2) do	(2) do	do.	H.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do.	do.	H.
		(4) Five-ply crepe paper inner sack, securely closed.	—	—	(4) Packed in double hessian or in a hessian outer sack which is lined with crepe paper or otherwise made sift-proof. The mouth of the sack to be firmly tied with string.	—	(4) do	(4) do.	do.	H.
Note.—Lump charcoal which has been exposed to the air for 8 days is not considered to be hazardous.		(5) Double crepe paper inner sack, securely closed.	—	—	(5) Packed in a 4-ply paper outer sack, securely closed by string.	—	(5) do	(5) do.	do.	H.
		(6) Sealed stout paper bags.	—	—	(6) Packed in strongly constructed wooden outer cases. Printed paper must not be used in the packing.	—	(6) do.	(6) do	do.	H.
Note.—Steam activated charcoal in itself is not considered to be hazardous.		(7) Suitable drums of fibreboard or plywood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do.	(7) do.	do.	H.
		(8) Suitable metal drums (e.g. steel), effectively closed.	—	—	(8) —	—	(8) do.	(8) do.	do.	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are permitted to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CARBON OR CHARCOAL OF ANIMAL OR MINERAL ORIGIN including: BONE BLACK, CARBON BLACK, DROP BLACK, GAS BLACK, IVORY BLACK.	Negligible fire or dust risk. *Note*: Carbon Black is not dangerous in itself.	Any sift-proof container sufficiently strong to prevent any escape of the contents.	—	—	—	—	On or under deck. Away from oxidising agents and oily matter.	As for cargo ships.	6	—
CARBON PAPERS (Carbon paper which does not contain an oxidisable oily or fatty substance is not dangerous and may be carried without restriction).	Liable to spontaneous combustion when containing fatty substances and finely divided carbon or compounds of carbon.	Tins of suitable make, effectively closed.	—	—	Packed in outer cases.	—	On or under deck.	do.	4	—
COPRA	Readily combustible.	Bags or in bulk.	—	—	—	—	(*a*) Any bags or mats in which copra may be shipped should be dry, and the copra itself as free as possible from moisture. (*b*) Any damp copra and/or bags or mats should be rejected. (*c*) The copra, if carried in a lower hold, should not be stowed in contact with a bulkhead liable to become heated. (*d*) Efficient ventilation, both surface and through, should be provided, and, where large quantities of copra are carried, temperatures should be taken night and morning and a record kept. (*e*) The openings of ventilators should be protected with fine gauze or other contrivance to minimise the risk from sparks.	do.	2	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
COPRA (*Contd.*)							(*f*) Smoking and the use of naked lights in holds or near open hatches should be strictly prohibited.			
COTTON, CLEAN, (DRY), including COTTON SWEEPINGS, COTTON WASTE CLEAN (DRY).	Readily combustible. In some cases fires have been attributed to sparks, cigarette ends, etc., alighting on an exposed surface. These fibres are considered not in themselves liable to spontaneous combustion. They are, however, liable to spontaneous combustion if they become impregnated with oil.	Must be securely baled.	—	—	—	—	Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils including turpentine or resin oils, should be stowed in a compartment above such oils but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage.	As for cargo ships.	3	—
COTTON, CLEAN, (WET OR DAMP), including COTTON WASTE, CLEAN, (WET OR DAMP)	Not in itself liable to spontaneous combustion (i.e. when not contaminated by oxidisable materials, etc.).	Must be securely baled.	—	—	—	—	Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils including turpentine or resin oils, should be stowed in a compartment above such oils but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage. *Note*: In view of possible contamination by oxidisable materials in the water with which bales of cotton have been wetted, wet and dry bales of cotton should not be stowed together.	As for cargo ships.	3	—

Note: Ministry of Transport and Civil Aviation approval must be sought for all shipments of bales of Cotton, including Cotton Waste, which have been burnt or salvaged from a fire.

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
COTTON SEED CUT LINTERS, COTTON SEED HULL FIBRES, COTTON SEED PULP, COTTON SEED SHAVINGS.	Susceptible to fire from sparks and also subject to spontaneous heating when wet or in contact with animal or vegetable oil or grease.	Must be dry and securely baled.	—	—	—	—	On or under deck. Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils, including turpentine or rosin oils, should be stowed in a compartment above such oils, but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage.	As for cargo ships.	3	—
COTTON WASTE, OILY : (a) Containing not more than 10% saponifiable matter.	—	Must be dry and securely baled.	—	—	—	—	On or under deck. Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils, including turpentine or rosin oils, should be stowed in a compartment above such oils, but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage.	As for cargo ships.	3	—
(b) Containing more than 10% saponifiable matter.	—	(1) Metal-lined boxes of suitable make, hermetically sealed. (2) Metal containers of suitable material and make, hermetically sealed.	— —	— —	(1) — (2) —	— —	(1) On or under deck. (2) do	(1) do. (2) do.	do. do.	H. H.
DIETHYLZINC (Zinc Ethyl).	Spontaneously inflammable when exposed to air.	Glass ampoules.	—	—	Packed in sawdust in sealed metal containers. Not to be packed with any other commodity	1 lb.	On deck.	Not allowed.	3	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Di-methyl-*p*-nitrosoaniline (Accelerene)	Liable to spontaneous combustion when dry. Poisonous. Taints food and colours other materials	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food, foodstuffs, acids and living quarters (see definition (A), page 5).	(1) Not allowed.	3	H
		(2) *With 50% moisture.* Sound watertight wooden casks or barrels. Iron containers should not be used.	—	—	(2) —	—	(2) do	(2) do.	do.	H.
Driers, Paint or Varnish in solid form (Linoleates, Resinates, Naphthenates, Tungates of Lead, Manganese, Aluminium, Sodium, Zinc, Cobalt). (For driers wet with an inflammable liquid see Section 5).	Not spontaneously inflammable but if cotton or other vegetable fibres are impregnated with this material spontaneous combustion may arise.	*Note.*—These substances are not dangerous in themselves but, should be stowed away from cotton or other vegetable fibres.								
Fibres, Burnt, Wet or Damp (Felt, Hemp, Jute, Rags, Wool and wastes of these materials and fibres of vegetable or animal origin that have been involved in a fire or have been wetted by rain or other moisture).	Liable to spontaneous combustion.	(1) Metal-lined wooden boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck. Away from vegetable fibres.	(1) Not allowed.	3	H.
		(2) Metal containers of suitable make, hermetically sealed.	—	—	(2) —	—	(2) do.	(2) do	do.	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 33) (10)	Recommended Label or Stencil (11)
FIBRES (COIR, FLAX, HEMP, JUTE, KAPOK, SISAL and other vegetable fibres).	Readily combustible. In some cases fires have been attributed to sparks, cigarette ends, etc., alighting on an exposed surface. These fibres are considered not in themselves liable to spontaneous combustion. They are, however, liable to spontaneous combustion if they become impregnated with oil.	Must be dry and securely baled.	—	—	—	—	On or under deck. Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils, including turpentine or rosin oils, should be stowed in a compartment above such oils, but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage.	As for cargo ships.	3	—
FIBRES OR FABRICS WITH ANIMAL OR VEGETABLE OIL (excluding Woollen Shoddy, for which see page 211)	Fibres or fabrics impregnated with more than 10% of animal or vegetable oil, including oiled or treated paper or textiles not manufactured into completed articles (for manufactured articles see Oiled Cloth).	(1) Metal lined boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck.	(1) As for cargo ships	3	H.
		(2) Metal containers of suitable make, hermetically sealed.	—	—	(2) —	—	(2) do.	(2) do.	do	H.
FISH SCRAP OR FISHMEAL.	Liable to spontaneous heating and ignition. Offensive odour will contaminate food.									
(a) Containing at least 6% and not more than 12% of moisture.		(1) Jute (Burlap) bags	—	—	(1) —	—	(1) On or under deck. Away from food and foodstuffs. Through and surface ventilation to be provided.	(1) Not allowed	3	—
		(2) Double - walled paper bags.	—	—	(2) —	—	(2) do	(2) do.	do	—
(b) Containing less than 6% or more than 12% of moisture.		(1) Metal-lined boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck.	(1) As for cargo ships	do,	H.
		(2) Airtight metal containers.	—	—	(2) —	—	(2) —	(2) do.	do	H.
(c) Wet acidulated (moisture content more than 40%).		NO RESTRICTIONS other than column 10.							4	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HAY, STRAW OR BHUSA.	Readily ignited by external sparks and must be shipped dry as liable to spontaneous ignition if wet or damp. Shipment loose, wet or damp is not permitted.	Pressed into bales and well bound.	—	—	—	—	On or under deck.	As for cargo ships.	3	—
IRON OXIDE SPENT (Iron Sponge)	Liable to spontaneous heating and ignition if stowed in piles unless weathered and cooled for 3 weeks for Home Trade voyages and 8 weeks for Foreign voyages, and a declaration must be obtained to this effect. Contains sulphides.	—	—	—	—	—	If properly weathered may be carried in bulk in a hold not under living quarters	Not allowed.	3	—
	IRON OXIDE SPENT IS PROHIBITED IF NOT WEATHERED AND COOLED									
LAMP BLACK (Vegetable Black).	There is a slight risk of spontaneous combustion or a dust explosion. (Not to be confused with Carbon Black which presents a negligible risk).	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from oxidising agents.	(1) As for cargo ships.	4	H.
		(2) Suitable polythene bags, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(2) do.	(2) do.	do.	H.
Note:—Lamp Black of mineral origin is not dangerous in itself.		(3) Suitable wooden barrels lined or coated internally with paper or other suitable material, effectively closed.	—	—	(3) —	—	(3) do	(3) do	do	H.
		(4) Sift proof paper bags with outside crepe paper bags	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do.	H.
		(5) Paper-lined sift-proof wooden boxes	—	—	(5) —	—	(5) do.	(5) do.	do	H.
		Note :—For packings (3), (4) and (5) printed paper must not be used.								
		(6) Suitable metal drums (e.g. steel), effectively closed	—	—	(6) —	—	(6) do	(6) do	do	H.
		(7) Bales, consisting of inner kraft paper attached to hessian outer liner with bitumen and then wrapped in crepe paper. Iron bound and sealed so that no leakage can occur	—	—	(7) —	—	(7) do.	(7) do	4	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MAGNESIUM ALLOYS (pyrophoric).	May produce sparks on being shaken in the container. React with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make, effectively closed (2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed (3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	— — —	— — —	(1) Packed with suitable protective material in tin lined wooden cases (2) Packed in tin-lined wooden cases. (3) —	— — —	(1) Under deck. Away from inflammable liquids (2) do. (3) do	(1) As for cargo ships. (2) do (3) do	3 do. do.	H. H. H.
OAKUM	Fibre of hemp or mixtures of hemp with other fibres and impregnated with pine tar or pitch or other similar substances. Principal risk is ready ignition by sparks but there is also the risk of spontaneous heating.	(1) Wooden boxes of suitable make, effectively closed. (2) Bales pressed reasonably tight and bound with wire, metal hoops, rattan rope or withes	— —	— —	(1) — (2) —	— —	(1) On or under deck. (2) do.	(1) do. (2) do.	4 do.	— —
OILED CLOTH, OILED PAPER, other than manufactured articles properly "aged" which are not liable to spontaneous combustion. When used as packing for other substances care should be taken that the material has been properly dried and that the various folds do not overlap so as to bring several thicknesses together.	If newly manufactured and insufficiently dried is liable to spontaneous combustion.	Metal lined cases of suitable make, effectively closed.	—	—	—	—	On or under deck.	As for cargo ships.	4	H.
PHOSPHORUS, WHITE or YELLOW.	Spontaneously inflammable in air. Poisonous									
(a) Dry		Suitable metal drums (e.g. steel), effectively closed.	—	—	—	5 cwt.	On deck, or under deck in a deep tank. Away from inflammable substances, strong supporters of combustion and living quarters (see definition (A), page 5).	Not allowed.	3	C and H

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 530)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOSPHORUS, WHITE or YELLOW, (*Contd.*) (*b*) In water		(1) Packed in water in glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	On deck, or under deck in a deep tank. Away from inflammable substances, strong supporters of combustion and living quarters (see definition (A), page 5)	(1) Not allowed.	3	C and H.
		(2) Packed in water in an effectively closed metal container of adequate strength.	—	56 lb. per container. Not more than 1 cwt. of phosphorus per case.	(2) Packed with sawdust in wooden cases.	—	(2) do	(2) do	do.	C and H
		(3) Packed in water in suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	5 cwt.	(3) do.	(3) do.	do	C and H.
PHOSPHORUS SULPHIDES.	Very inflammable. Liable to spontaneous combustion unless free from white or yellow phosphorus.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food, foodstuffs, acids, inflammable substances and living quarters (see definition (A), page 5)	(1) On deck only	3	H
		(2) Tins or cans of suitable make, effectively closed.	—	28 lb. per container Not more than 2 cwt. per case.	(2) Packed in wooden cases	—	(2) do.	(2) do.	do.	H.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	H.
POTASSIUM SULPHIDE ANHYDROUS.	Liable to spontaneous combustion. In contact with acids evolves hydrogen sulphide.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids.	(1) As for cargo ships.	4	H.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do.	H.
RAGS, OILY		NOT ALLOWED								
RUBBER, HARD (e.g. Vulcanite or Ebonite) WASTE IN POWDER FORM.	Liable to spontaneous combustion.	(1) Suitable metal drums (e.g. steel), each lined or coated internally with paper or other suitable material, effectively closed.	—	—	(1) —	—	(1) On or under deck.	(1) do	3	H
		(2) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(2) —	—	(2) do.	(2) do	do.	H.
		(3) 5-ply paper bags, effectively closed	—	—	(3) Packed in hessian outer bags	—	(3) do	(3) do.	do	H

Note.—If fully vulcanised hard rubber may be regarded as non-hazardous.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM DITHIONITE (Sodium Hydrosulphite).	Liable to become hot and to ignite in contact with moisture and air, and also to give off an intensely irritating gas.	(1) Glass or earthenware containers of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck, readily accessible. Away from acids, combustible cargo and living quarters (see definition (A), page 5).	As for cargo ships.	3	H
		(2) New tins or cans of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(2) Packed in wooden cases	—	(2) do	(2) do	do.	H.
		(3) New iron or steel barrels or drums of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(3) Packed in an outer wooden or fibreboard container.	—	(3) do	(3) do	do	H
SODIUM SULPHIDE containing less than 30% water of crystallisation).	Liable to spontaneous combustion. In contact with acids evolves hydrogen sulphide.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids.	(1) As for cargo ships	4	H.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do	(2) do.	do	H
STRONTIUM ALLOYS (pyrophoric).	May produce sparks on being shaken in the container. React with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in tin-lined wooden cases	—	(1) Under deck. Away from inflammable liquids.	(1) do.	3	H.
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed.	—	—	(2) Packed in tin-lined wooden cases	—	(2) do	(2) do.	do.	H.
		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	—	—	(3) —	—	(3) do	(3) do.	do	H.
TOE PUFFS (box toe board used in the manufacture of boots and shoes).	Consist of several layers of fabric impregnated with cellulose nitrate, solvent, rosin and dye. Liable to spontaneous combustion.	Tins or cans of suitable make, hermetically sealed.	—	—	Packed in wooden cases.	—	On or under deck. Away from inflammable cargo.	do.	4	—
SUNFLOWER SEED EXPELLERS.	If this commodity is shipped wet or contains moisture there is a risk of spontaneous combustion. Must be shipped dry.	Dry bags	—	—	—	—	(1) The cargo must be shipped dry and kept dry. Prior to shipment ship owners should arrange for a competent surveyor to in-	do.	2	—

Note.—There are no restrictions on Toe Puff material which has been tested by the Ministry of Transport and Civil Aviation and found not liable to spontaneous combustion.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
SUNFLOWER SEED EXPELLERS (*Contd.*).							spect bags offered for shipment and reject any which show the slightest sign of damp or oil stain. Ships' holds should be covered if rain occurs during loading. The surveyor should also ascertain to his satisfaction, and provide a certificate to the master that since being crushed the expellers have been exposed to a dry atmosphere for at least 10 days, as experience has shown it continues to absorb moisture after crushing. (2) It should be stowed in the 'tween decks or given top stowage not exceeding ten tiers in lower holds. (3) Cargo battens must be intact throughout to keep the cargo off the ship's sides, but it is also essential to insulate this cargo from bulkheads, specially stokehold bulkheads and shaft tunnel, allowing if possible a 12-inch air space. (4) Throughout the voyage particular attention should be paid to ventilation so as to ensure no dampness arises from sweat with consequent danger of spontaneous combustion. Thermometers to watch temperature of the cargo should be provided.			

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	Recommended Label or Stencil (11)
WOOLLEN SHODDY (Reworked wool which has been subjected to any processing, e g. pulling, carding, garnetting, etc.)	For carriage without restriction, a guarantee must be obtained from the makers that the oil used in the processing satisfies the following insurance conditions :— (*a*) That the flash point of the oil used was above 340° F. by open test. (*b*) that it satisfied the Mackay test ; and (*c*) that the iodine value of the saponifiable matter in the oil did not exceed 90. If this guarantee cannot be given, Woollen Shoddy must be packed in :—									
		(1) Metal-lined boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck.	(1) As for cargo ships.	4	H.
		(2) Metal containers of suitable material and make, hermetically sealed.	—	—	(2) —	—	(2) do	(2) do.	do.	H.

SECTION 9

(Category (ix) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Cases Containing *Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities

1 Scope of Section

The restrictions and relaxations provided by this Section apply only to laboratory chemicals and medicinal preparations and do not apply to toilet preparations, cosmetics, perfumery products or to substances intended for use other than as Laboratory Chemicals and/or Medicinal Preparations.

Cases tendered for shipment under the provisions of this Section may contain one chemical or medicinal substance only, or a variety of such substances, provided that such substances are not prohibited by and are packed in conformity with this Section.

The substances which may be packed and carried under the provisions of this Section include also substances not specifically mentioned in this Section provided that :—

(*a*) They are intended for laboratory or medicinal use only

(*b*) They are not prohibited to be carried in ships.

(*c*) They conform as regards limitations of quantity to paragraph 3.

(*d*) They are packed in conformity with paragraph 4.

2. Stowage

Cases tendered for shipment under the provisions of this Section may be stowed under deck. When so stowed they should, where possible, have top stowage and be readily accessible for fire-fighting purposes. Inflammable liquids must not be stowed in the same space except as provided for in this Section. Such cases may also be stowed on deck If the consignment contains any inflammable liquids it should be separated from explosives by the engine room and boiler space. If inflammable liquids are not present, the stowage should be in a separate hold from that of explosives

3. Limitation of Quantity

(*a*) *Solids.* Not more than 12 lb or 5½ kg. may be packed in any one immediate container, but where a lower limit is shown in respect of any substance that limit prevails.

(*b*) *Liquids.* Not more than 5 pints or 2·9 litres may be packed in any one immediate container, but where a lower limit is shown in respect of any substance that limit prevails.

(*c*) *Gross weight* of any one case must not exceed 3 cwt.

(*d*) *Total gross weight* of such cases which may be stowed under deck in passenger ships must not exceed 25 tons

(*e*) When the material is in the form of tablets, or when it is packed in sealed containers such as ampoules or capsules each of which contains no more than ½ oz. or 15 g. net, the net quantity as shown in Column 4 and 5 of the Schedule on pages 214-217, may be doubled.

4. Incompatibility of Substances Packed in One Case

It is possible that interior packages may contain substances liable to react dangerously and cause :—

(*a*) Evolution of considerable heat and/or combustion.

(*b*) Evolution of inflammable or poisonous gas.

(*c*) The formation of a corrosive liquid.

Substances which are liable to react dangerously must be well isolated from each other Substances packed together in one case must be selected and packed in a manner (by, for example, the use of appropriate and effectively closed containers (glass tubes, bottles, etc.) and suitable absorbent and/or protective material) calculated to prevent the danger of reaction of one substance with another. In particular, such selection must conform to the prohibitions shown in the table on page 219.

5. Certificate of Compliance

Consignments tendered for shipment under the provisions of this Section must be accompanied by a certificate, signed by the shipper, of compliance with these regulations A specimen of the certificate is shown on page 218

6. Labelling

Cases must be labelled with the required label (see page 229)

7. Chlorates

(*a*) Immediate containers must be surrounded by resilient non-organic material and packed in a separate intermediate container of non-organic material, distinct from the outer container· Not more than 40 oz. or 1 kg. may be packed in one intermediate container No cotton wool or organic material other than a small waxed card wad may be in contact with the chlorate except as allowed below

(*b*) If the chlorate is in tablet form, with or without a suitable binding agent, and is packed in bottles each containing not more than 6 oz. or 170 g of chlorate, cotton wool may be used in sufficient quantity to prevent appreciable movement of the tablets within the bottle. The bottles may be packed in cardboard cartons in a separate intermediate container distinct from the outer case. Not more than 40 oz. or 1 kg. of chlorate may be packed in one intermediate container and not more than 12 lb of chlorate in each case.

8. Inflammable Liquids

(*a*) Flash point below 73° F —not more than 10 pints may be carried in one case, except as allowed below.

(*b*) When any inflammable liquid with fl. pt below 73° F. consists solely of an alcohol and/or alcoholic solution and/or tincture the fl. pt. of which is not below 60° F such liquid may be carried under deck provided that not more than 5 pints are contained in any immediate container, and that no case contains more than 10 gal.

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* See Note on Page 213

9. Air Space and Packing

Where air spaces and/or methods of packing are shown in other Sections for any substances they shall apply also to this Section except that any methods of packing or quantity limits shown in this Section shall (in respect of goods shipped under the provisions of this Section) prevail against those shown elsewhere.

10 The substances marked with an asterisk in this section are not dangerous substances and are mentioned only by reason of the fact that if they come into intimate contact with certain dangerous substances *vide* page 219 they may intensify the degree of hazard attaching to those dangerous substances

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*NOTE :—While Section 9 applies only to substances intended for use as Laboratory Chemicals and/or Medicinal Preparations and then only when the quantities are limited to those prescribed in that Section, it is nevertheless permissible to ship, other than under the provisions of Section 9, suitable containers containing an assortment of individual substances (one or more of which is a dangerous substance) when either :—

(*a*) they are intended for use *other than* as Laboratory Chemicals and/or Medicinal Preparations ; or

(*b*) the quantities of the dangerous substance are greater than are permitted under the provisions of Section 9 ,

provided :—

(1) the individual substances are not such as would react dangerously with each other and are selected and packed in accordance with the packing and stowage requirements of Sections 3—8 and 10 appropriate to each such substance.

(2) that if a container contains any substance in respect of which stowage "on deck only" is prescribed under the provisions of Sections 3—8 and 10 then such container must be stowed on deck only, otherwise stowage may be on or under deck.

(3) that containers are labelled with the labels (see pages 228-229), if any, required in respect of each substance included in the container, as indicated in the appropriate column in Sections 3–8 inclusive, and Section 10

(4) that no container exceeds 3 cwt. gross weight.

(5) that such consignments tendered for shipment are accompanied by a certificate, signed by the shipper, of compliance with requirements (1), (3) and (4) above.

MAXIMUM QUANTITIES PERMITTED BY THIS SECTION OF SUBSTANCES TO WHICH QUANTITY RESTRICTIONS APPLY

(Where no maximum is shown the quantity is not restricted)

Item No.	Substance "P" denotes that the inclusion of the substance in Consignments shipped under the provisions of this section is PROHIBITED	Maximum Net Quantity per Immediate Container (Weight or Volume)		Maximum Net Quantity per Case (Weight or Volume)		Maximum Net Quantity which may be shipped from one Consignor to one Consignee (Weight or Volume)		Observations
		U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	
(1)	(2)	(3)		(4)		(5)		(6)
1	Acetic Acid	5 pt.	2·9 L.	—	—	—	—	See para. 4 and page 219.
2	Alkali Metals, e.g. Potassium and Sodium and Alkali Earth Metals, e.g. Barium and Calcium.	1½ lb.	½ kg.	1½ lb.	½ kg	5 lb.	2¼ kg.	Limits in cols (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total.
3	Aluminium Chloride, Anhydrous	5 lb	2¼ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	
4	Aluminium Ferrosilicon	5 lb	2¼ kg.	5 lb.	2¼ kg.	10 lb	4½ kg.	
5	Aluminium, Granulated or Powder	5 lb	2¼ kg.	5 lb.	2¼ kg.	10 lb	4½ kg.	
6	Aniline	6 lb.	2¾ kg	36 lb.	16 kg	72 lb.	32 kg	See para. 4 and page 219.
7	Antimony Chloride	5 lb.	2¼ kg	5 lb	2¼ kg.	10 lb.	4½ kg.	
8	Barium, Metal	1½ lb.	½ kg.	1½ lb	½ kg.	5 lb.	2¼ kg.	Limits in cols. (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total.
9	Barium Peroxide	1½ lb.	½ kg.	1½ lb	½ kg.	5 lb.	2¼ kg.	See para. 4 and page 219. Not to be in the same cases with Aluminium Metal, granulated or powder, or Acetic Acid. Limits in cols. (4) and (5) apply to items 9, 55, 61 and 66 in total
10	* Benzoic Acid	12 lb.	5½ kg.	—	—	—	—	See para. 4 and page 219.
11	Benzyl Peroxide	P		P		P		
12	Bromine and Solutions of Bromine	1½ lb	½ kg.	1½ lb	½ kg	5 lb	2¼ kg.	
13	Calcium, Metal	1½ lb	½ kg.	1½ lb.	½ kg.	5 lb.	2¼ kg.	Limits in cols. (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total.
14	Calcium Carbide	P		P		P		
15	Calcium Cyanamide (Nitrolim), containing not more than 0·5% Calcium Carbide.	5 lb.	2¼ kg	5 lb.	2¼ kg.	10 lb.	4½ kg.	
16	Calcium Phosphide	P		P		P		
17	* Carbon Dioxide in sealed metal capsules, bulbs or cylinders each containing not more than 1½ oz. or 45 g. net of Carbon Dioxide.	1½ oz.	0·045 kg.	—	—	—	—	Unrestricted.
18	Carbon Disulphide	1½ lb	½ kg.	1½ lb.	½ kg.	2¼ lb.	1 kg	See para. 4 and page 219.
19	Chlorates	2¼ lb.	1 kg	6 lb.	2¾ kg	12 lb.	5½ kg.	See paras. 4 and 7 and page 219.
20	Chlorosulphonic Acid	10 lb.	4½ kg.	60 lb.	27 kg.	60 lb	27 kg.	See para. 4, item 69, and page 219. Limits in cols. (4) and (5) apply to items 20 and 69 in total.
21	Chromium Trioxide (Chromic Anhydride, Chromic Acid)	10 lb.	4½ kg.	10 lb.	4½ kg.	10 lb.	4½ kg.	No sawdust or other organic packing (other than in the case of solutions only, approved whiting-sawdust mixture) to be used.

Item No.	Substance "P" denotes that the inclusion of the substance in Consignments shipped under the provisions of this section is PROHIBITED	Maximum Net Quantity per Immediate Container (Weight or Volume)		Maximum Net Quantity per Case (Weight or Volume)		Maximum Net Quantity which may be shipped from one Consignor to one Consignee (Weight or Volume)		Observations
		U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	
(1)	(2)	(3)		(4)		(5)		(6)
22	Cyanides (other than Hydrocyanic Acid)	1½ lb	½ kg	1½ lb.	½ kg.	2¼ lb	1 kg	No acid of any description may be packed in same case.
23	Diethylamine, Solution	5 pt.	2·9 L.	10 pt.	5·7 L.	20 pt.	11·5 L.	See paras. 4 and 8 and page 219.
24	Diethylzinc	P		P		P		
25	Dimethylamine Solution	5 pt.	2·9 L.	10 pt.	5·7 L.	20 pt.	11·5 L.	See paras. 4 and 8 and page 219.
26	Dimethyl-*p*-nitrosoaniline (dry)	1½ lb.	½ kg.	1½ lb.	½ kg.	5 lb	2¼ kg.	See para. 4
27	Dimethyl-*p*-nitrosoaniline wet with not less than its own weight of water	5 lb.	2¼ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	See para. 4.
28	Dinitrophenol (dry)	5 lb.	2¼ kg.	5 lb.	2¼ kg.	20 lb.	9 kg.	See para. 4 and page 219. Not more than 20 lb. (9 kg.) per ship of items 28, 50 and 58 in total to be carried under the provisions of this section.
29	Dinitrophenol wet with not less than 15% of water calculated on the wet weight.	12 lb	5½ kg.	24 lb.	11 kg.	24 lb	11 kg.	Not explosive when so wetted. See para. 4 and page 219.
30	Erythrityl Tetranitrate Mixture	1 oz.	30 g.	1½ lb.	½ kg	24 lb.	11 kg.	Conditions as to composition and packing as approved by the Ministry of Transport and Civil Aviation. Not more than 24 lb. (11 kg.) per ship of items 30 and 45 in total to be carried under the provisions of this section.
31	Explosives other than items 28, 50 and 58 which may be included only when complying with these regulations	P		P		P		
32	Formic Acid	5 pt.	2·9 L.	—	—	—	—	See para. 4 and page 219
33	Fulminates or Liquids which, on evaporation, would leave a fulminate as residue.	P		P		P		
34	Gases, Compressed or Absorbed (other than items 17 and 71).	P		P		P		
35	* Glycerol	5 pt.	2·9 L.	—	—	—	—	Not to be packed in same case with Nitric Acid exceeding 1·14 Sp. Gr. or with Permanganates.
36	Hydrazine Compounds (other than Hydrazine Nitrate and Hydrazine Perchlorate which are PROHIBITED)	12 lb.	5½ kg	12 lb.	5½ kg.	12 lb.	5½ kg.	See para. 4 and page 219
36A	Hydrides of Aluminium, Calcium, Lithium and Lithium Aluminium.	1½ lb.	½ kg.	1½ lb.	½ kg	5 lb.	2¼ kg.	Limits in column (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total. *Note*.—Applications for shipment of other Metallic Hydrides should be made to the Ministry of Transport and Civil Aviation.
37	Hydrobromic Acid Solution	5 pt.	2·9 L.	5 pt.	2·9 L.	15 pt.	8·6 L.	
38	Hydrochloric Acid exceeding 16% w/w or 1·08 Sp. Gr.	5 pt.	2·9 L.	30 pt.	17 L.	240 lb.	110 kg.	See para. 4 and page 219. Limits in cols. (4) and (5) apply to items 38, 47, 48, 49, 72 and 73 in total.
39	Hydrocyanic Acid in Solution not exceeding 4% w/w ..	5 lb	2¼ kg.	10 lb.	4½ kg.	10 lb.	4½ kg.	No other acid of any description may be packed in same case. Higher strengths prohibited.
40	Hydrofluoric Acid Solution..	1½ lb	½ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	

Item No	Substance "P" denotes that the inclusion of the substance in Consignments shipped under the provisions of this section is PROHIBITED	Maximum Net Quantity per Immediate Container (Weight or Volume)		Maximum Net Quantity per Case (Weight or Volume)		Maximum Net Quantity which may be shipped from one Consignor to one Consignee (Weight or Volume)		Observations
		U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	
(1)	(2)	(3)		(4)		(5)		(6)
41	Hydrogen Peroxide: *Not over 6%	NO RESTRICTION						
	Not over 15% or 40 vol. ..	5 pt.	2·9 L.	20 pt.	11·5 L.	40 pt.	23 L.	See para. 4 and page 219. Over 40% (133 vols.) PROHIBITED
	Over 15% and under 40% ..	5 pt.	2·9 L.	10 pt.	5·7 L.	20 pt.	11·5 L.	
42	* Hypophosphites	5 pt.	2·9 L.	—	—	—	—	See para. 4 and page 219.
43	Inflammable Liquids—Flash Point below 73°F. ..	5 pt.	2·9 L.	10 pt.	5·7 L.	—	—	The limit in col. (4) is subject to relaxation allowed by para. 8 (b). See paras. 4 and 8 and page 219
44	Magnesium Metal, powder, ribbon or granulated ..	5 lb	2¼ kg	5 lb.	2¼ kg.	10 lb	4½ kg.	
45	Mannityl Hexanitrate Mixture	1 oz.	30 g.	1¼ lb	½ kg.	24 lb	11 kg.	Conditions as to composition and packing as approved by the Ministry of Transport and Civil Aviation. Not more than 24 lb (11 kg.) per ship of items 30 and 45 in total to be carried under the provisions of this section
46	Nickel Carbonyl	P		P		P		
47	Nitric Acid and Sulphuric Acid Mixtures exceeding 1·14 Sp. Gr.	5 pt.	2·9 L.	30 pt.	17 L.	90 lb.	40 kg.	See para. 4 and page 219. Limits in cols. (4) and (5) for items 47, 48 and 49 apply to items 38, 47, 48, 49, 72 and 73 in total.
48	Nitric Acid exceeding 22% w/w or 1·14 Sp. Gr. but not exceeding 1·42 Sp. Gr.	5 pt.	2·9 L.	30 pt.	17 L.	90 lb.	40 kg.	
49	Nitric Acid, fuming, exceeding 1·42 Sp. Gr.	5 pt.	2·9 L.	20 pt.	11·5 L.	60 lb.	27 kg.	
50	Nitroglycerin, a 1% solution in Ethyl Alcohol	1¼ lb	½ kg.	1¼ lb	½ kg.	20 lb.	9 kg.	See para. 8. Not more than 20 lb. (9 kg.) per ship of items 28, 50 and 58 in total to be carried under the provisions of this Section.
51	Perchlorates (other than organic perchlorates, which are PROHIBITED)	12 lb	5½ kg.	12 lb.	5½ kg.	12 lb.	5½ kg.	See para. 4 and page 219.
52	Perchloric Acid	P		P		P		
53	Permanganates	12 lb.	5½ kg.	12 lb.	5½ kg.	24 lb.	11 kg.	See para. 4 and page 219.
54	Peroxides, Organic	P		P		P		
55	Peroxides (other than Hydrogen Peroxide and other than Organic Peroxides).	1¼ lb.	½ kg.	5 lb.	2¼ kg.	5 lb.	2¼ kg.	See para. 4 and page 219. Not to be in the same case with Aluminium Metal, granulated or powder, or Acetic Acid. Limits in cols. (4) and (5) apply to items 9, 55, 61 and 66 in total.
56	Phosphorus Sulphides	P		P		P		
57	Phosphorus, white or yellow	P		P		P		
58	Picric Acid (dry)	1 lb.	0·45 kg.	1 lb.	0·45 kg.	5 lb.	2¼ kg.	See para. 4 and page 219. Not more than 20 lb. (9 kg.) per ship of items 28, 30, 58 in total to be carried under the provisions of this Section.
59	Picric Acid wet with not less than 33⅓% of water calculated on the wet weight.	12 lb	5½ kg	12 lb.	5½ kg.	24 lb.	11 kg.	Not explosive when so wetted. See para. 4 and page 219.
60	Potassium, Metal	1¼ lb.	½ kg.	1¼ lb.	½ kg.	5 lb.	2¼ kg.	Limits in cols. (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total.

Item No.	Substance “*” denotes that the inclusion of the substance in Consignments shipped under the provisions of this section is PROHIBITED	Maximum Net Quantity per Immediate Container (Weight or Volume)		Maximum Net Quantity per Case (Weight or Volume)		Maximum Net Quantity which may be shipped from one Consignor to one Consignee (Weight or Volume)		Observations
		U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	U.K. Units	Metric Equivalent	
(1)	(2)	(3)		(4)		(5)		(6)
61	Potassium Peroxide	1¼ lb	½ kg.	5 lb.	2¼ kg.	5 lb.	2¼ kg	See para. 4 and page 219. Not to be in the same case with Aluminium Metal granulated or powder, or Acetic Acid. Limits in cols. (4) and (5) apply to items 9, 55, 61 and 66 in total.
62	Potassium Sulphide (other than hydrated, containing not less than 30% water of crystallisation and other than Potassium Polysulphide (Liver of Sulphur)).	5 lb.	2¼ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	
63	Pyridine	6 lb	2¼ kg.	12 lb.	5½ kg.	36 lb.	16 kg.	See paras. 4 and 8 and page 219
64	* Salicylic Acid	12 lb	5½ kg.	—	—	—	—	See para. 4 and page 219.
65	Sodium, Metal	1¼ lb.	½ kg.	1¼ lb.	½ kg.	5 lb.	2¼ kg.	Limits in cols. (4) and (5) apply to items 2, 8, 13, 36A, 60 and 65 in total.
66	Sodium Peroxide	1¼ lb.	½ kg.	5 lb.	2¼ kg.	5 lb.	2¼ kg.	See para. 4 and page 219. Not to be in the same case with Aluminium Metal, granulated or powder, or Acetic Acid. Limits in cols. (4) and (5) apply to items 9, 55, 61 and 66 in total
67	Sodium Sulphide (other than hydrated containing not less than 30% water of crystallisation).	5 lb.	2¼ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	
68	Stannic Chloride (Tin Tetrachloride) Anhydrous ..	5 lb.	2¼ kg.	5 lb.	2¼ kg.	10 lb.	4½ kg.	
69	Sulphonic Acids (various free acids)	12 lb.	5½ kg.	60 lb.	27 kg.	60 lb.	27 kg.	See para. 4, item 20 and page 219. Limits in cols. (4) and (5) apply to items 20 and 69 in total
70	Sulphur	12 lb	5½ kg.	12 lb.	5½ kg.	24 lb	11 kg.	See para. 4 and page 219
71	Sulphur Dioxide in Syphons containing not more than 3¼ lb. or 1½ kg. net of Sulphur Dioxide.	3¼ lb.	1½ kg.	3¼ lb.	1½ kg.	46 lb.	21 kg.	Four syphons per case permitted if case is partitioned with timber of thickness equal to that of the case sides
72	Sulphuric Acid, containing more than 5% free SO_3 (Oleum)	5 pt.	2·9 L.	20 pt.	11·5 L.	60 lb	27 kg.	See para. 4 and page 219. Limits in cols. (4) and (5) for items 72 and 73 apply to items 38, 47, 48, 49, 72 and 73 in total
73	Sulphuric Acid exceeding 51% w/w or 1·405 Sp. Gr.	5 pt.	2·9 L.	30 pt.	17 L.	240 lb	110 kg.	
74	Sulphur Monochloride	1¼ lb.	½ kg.	1¼ lb	½ kg.	5 lb.	2¼ kg.	
75	Sulphuryl Chloride	5 lb	2¼ kg.	5 lb	2¼ kg.	5 lb	2¼ kg	Not in the same case with Inflammable Liquids with Flash Point below 73° F
76	Thionyl Chloride	5 lb.	2¼ kg.	5 lb.	2¼ kg	5 lb.	2¼ kg.	
77	Titanium Tetrachloride	5 lb.	2¼ kg.	5 lb.	2¼ kg	10 lb	4½ kg.	
78	Toluidine	6 lb.	2¼ kg.	36 lb	16 kg	72 lb	32 kg.	See para. 4 and page 219.
79	* Triethanolamine	5 pt.	2·9 L.	30 pt.	17 L.	60 pt.	34 L.	See para. 4 and page 219.
80	Triethylamine	5 pt.	2·9 L.	10 pt.	5·7 L.	20 pt.	11·5 L.	See paras. 4 and 8 and page 219.
81	Trimethylamine Solution	5 pt.	2·9 L.	10 pt.	5·7 L.	20 pt.	11·5 L.	See paras. 4 and 8 and page 219.
82	Xylidine	6 lb.	2¼ kg.	36 lb.	16 kg.	72 lb	32 kg.	See paras. 4 and 8 and page 219.
83	Zinc, powder or dust	5 lb.	2¼ kg.	5 lb.	2¼ kg.	20 lb	9 kg.	

CERTIFICATE OF COMPLIANCE

with Section 9 of the Rules for the Carriage of Dangerous Goods and Explosives in Ships in Respect of Cases containing Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities

Shipping Mark .— *Cases Nos* /

We hereby certify that each of the above cases is packed in entire compliance with the Rules, Section 9, in respect of carriage in ships of cases containing consignments of laboratory chemicals and/or medical preparations in limited quantities, and, *inter alia*, that —

(1) The cases contain substances intended for laboratory or medicinal use only.

(2) No substance prohibited by these Rules is included in any of the cases

(3) Where any substance is by these Rules restricted as to quantity, no such substance is present in any immediate container or in any case or in this consignment in a greater quantity than is permitted by these Rules

(4) In none of the above numbered cases are present any two or more substances which, by the restrictions imposed in paragraph 4 of these Rules, are prohibited from being packed in the same case

(5) That the packing material, absorbent material, or insulating material used for packing each case is such as is suitable and by these Rules not prohibited in relation to the substances packed in each case

(6) No case exceeds 3 cwt. gross weight.

	Hydrochloric Acid over 16% w/w or 1·080 Sp. Gr.	Sulphuric Acid over 51% w/w or 1·405 Sp. Gr. Chlorosulphonic Acid.	Acetic Acid, Benzoic Acid, Salicylic Acid, Formic Acid, Many Free Sulphonic Acids.	Triethanolamine, Di- and Tri-ethylamine and Di- and Tri-methylamine Solutions.	Aniline, Pyridine, Xylidine, Toluidine.	Chlorates Permanganates {Must not be packed in the same case as unconfined Carbon (in any form,) Phosphorus, Hypophosphites or Ammonia and its compounds, except as provided for in Note 2 below}	Sulphur.	Inflammable Liquids fl. pt. under 73° F.	Hydrogen Peroxide not over 15% w/w or 50 Vol.	Hydrogen Peroxide over 15% w/w and not over 40% w/w.	Nitric Acid over 22% w/w or 1·140 Sp. Gr. Nitric Acid and Sulphuric Acid Mixtures.	Perchlorates, Peroxides (other than Hydrogen Peroxide and other than organic peroxides, which are PROHIBITED).	Hydrazine Compounds (other than Hydrazine Nitrate and Perchlorate, which are PROHIBITED).	Picric Acid Di-Nitro-Phenol {Wetted or dry must not be packed in the same case as heavy metals or their oxides or salts.}
Hydrochloric Acid over 16% w/w or 1·080 Sp. Gr.	—	—	—	—	—	**N**	—	—	—	—	—	**N**	—	—
Sulphuric Acid over 51% w/w or 1·405 Sp. Gr. Chlorosulphonic Acid.	—	—	—	—	—	**N**	—	—	**N**	**N**	—	**N**	**N**	—
Acetic Acid, Benzoic Acid, Salicylic Acid, Formic Acid, Many Free Sulphonic Acids.	—	—	—	—	—	**N**	—	—	Formic Acid **N** remainder allowed			—	—	—
Triethanolamine, Di- and Tri-ethylamine and Di- and Tri-methylamine Solutions.	—	—	—	—	—	**A**	—	—	**N**	**N**	**N**	—	—	—
Aniline, Pyridine, Xylidine, Toluidine.	—	—	—	—	—	**A**	—	—	**N**	**N**	**N**	**N**	—	—
Chlorates Permanganates {Must not be packed in the same case as unconfined Carbon (in any form,) Phosphorus, Hypophosphites or Ammonia and its compounds, except as provided for in Note 2 below}	**N**	**N**	**N**	**A**	**A**	—	**N**	**A**	Permanganates **N** Chlorates allowed		**N**	—	**N**	**N**
Sulphur.	—	—	—	—	—	**N**	—	—	—	—	—	**N**	**N**	—
Inflammable Liquids fl. pt. under 73° F.	—	—	—	—	—	**A**	—	—	**N**	**N**	**N**	—	—	**N**
Hydrogen Peroxide not over 15% w/w or 50 Vol.	—	**N**	Formic Acid **N** remainder allowed	**N**	**N**	Permanganates **N** Chlorates allowed	—	**N**	—	—	**N**	**X**	**N**	**N**
Hydrogen Peroxide over 15% w/w and not over 40% w/w.	—	**N**		**N**	**N**		—	**N**	—	—	**N**	**X**	**N**	**N**
Nitric Acid over 22% w/w or 1·140 Sp. Gr. Nitric Acid and Sulphuric Acid Mixtures.	—	—		**N**	**N**	**N**	—	**N**	**N**	**N**	—	**N**	**N**	—
Perchlorates, Peroxides (other than Hydrogen Peroxide and other than organic peroxides, which are PROHIBITED).	**N**	**N**	—	—	**N**	—	**N**	—	**X**	**X**	**N**	—	**N**	**N**
Hydrazine Compounds (other than Hydrazine Nitrate and Perchlorate, which are PROHIBITED).	—	**N**	—	—	—	**N**	**N**	—	**N**	**N**	**N**	**N**	—	**A**
Picric Acid Di-Nitro-Phenol {Wetted or dry must not be packed in the same case as heavy metals or their oxides or salts.}	—	—	—	—	—	**N**	—	**N**	**N**	**N**	—	**N**	**A**	—

NOTE 1

Where the letter "N" appears at the intersection of a horizontal band with a vertical column, a substance listed at the left hand of the horizontal band may not be packed in the same case with a substance listed at the head of the vertical column. This rule is however subject to the modification that in certain cases the significance of "N" is specifically shown to apply only to one substance or group of substances. For example, Pyridine or Permanganates may not, but Chlorates may, be packed in the same case as Hydrogen Peroxide.

NOTE 2

Where the letter "A" appears at the intersection of a horizontal band with a vertical column, a substance listed at the left hand of the horizontal band is allowed to be packed in the same case with substances listed at the head of the vertical column, provided that in the case of a solid a substance in the left-hand column is separated by a suitable partition from substances listed at the head of the vertical column. If the substance is a liquid, it must be contained in a separate and suitable internal case.

NOTE 3

Where the letter "X" appears at the intersection of a horizontal band with a vertical column, hydrogen peroxide is prohibited in the same case as metallic peroxides but is allowed in the same case as perchlorates

SECTION 10

(Category (x) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Other Dangerous or Hazardous Substances

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ACETALDEHYDE AMMONIA (Aldehyde Ammonia)	Pungent smelling crystalline solid which distils at 100° C., without decomposition. Decomposed by acids liberating aldehyde, a volatile inflammable liquid which is irritating to the respiratory tract.	(1) Glass or earthenware containers of suitable make, hermetically sealed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from acids.	(1) As for cargo ships.	5	—
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, hermetically sealed.	—	—	(3) Packed in wooden cases.	—	(3) do.	(3) do	do.	—
		(4) Iron or steel barrels or drums of suitable make, hermetically sealed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—
AMMONIUM DI-NITRO-ORTHO-CRESOLATE (Crystalline).	Supporter of combustion. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Not in the same hold as inflammable substances and not in contact with lead or compounds of lead. Away from food and foodstuffs.	(1) As for cargo ships.	4	C.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable barrels, or cases of wood with polythene liners, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	3	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
AMMONIUM PICRATE wet with not less than 33⅓ % of water calculated on the wet weight.	When dry is highly explosive.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids, inflammable substances and stowed so as not to come in contact with lead or metallic oxides (such as the oxides of copper, iron, lead or zinc), baryta, lime, soda or any compound of such metal or oxide (other than a metallic sulphate), or any chlorate, nitrate or oxidising agent.	(1) Not allowed.	3	—
		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected	—	50 lb	(2) —	—	(2) do.	(2) do.	do.	—
BENZOYL PEROXIDE (a) Dry		Packed in a polythene liner in a fibreboard carton.	—	1 lb per container Not more than 28 lb. per case.	Packed in strong outer cases lined internally with bitumen paper.	—	On deck in an easily accessible space.	do	3	—
(b) Wet with not less than 25% of water calculated on the net weight.		(1) Tins or cans of suitable make, effectively closed.	—	—	(1) Packed in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) Polythene bottles of suitable make, effectively closed.	—	2¼ lb. (1 kilo)	(2) Packed in outer double walled plywood cases, metal bound.	—	(2) do	(2) do	do	—
CUMENE HYDRO-PEROXIDE, suitably stabilised	Liquid with oxidising properties and flash point between 73°F and 150° F. Liable to decompose slowly with evolution of gas (oxygen).	(1) Glass or earthenware containers of suitable make fitted with non-corrosive pressure relief valve or vent.	25%	2½ gal.	(1) Packed with effective absorbent material in wooden cases of such a design that they can be stowed with the relief valves uppermost. Not more than 10 gal. in each case.	—	(1) On deck only Away from all other cargo of a combustible nature. Stowed so that valves or vents are kept uppermost.	(1) Not allowed.	4	F and A2
		(2) do.	25%	15 gal.	(2) Packed singly in : (a) wicker hampers with wicker bonnets , or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do.	(2) do.	4	F and A2.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
CUMENE HYDRO-PEROXIDE, suitably stabilised. (*Contd*)					(*c*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top the hamper; or (*d*) wooden cases with suitable protective material					
		(3) Suitably vented polythene bottles of suitable make.	25%	10 gal.	(3) Packed singly in suitably vented mild steel drums having a domed lid and suitable locating pads.	—	(1) On deck only. Away from all other cargo of a combustible nature. Stowed so that valves or vents are kept uppermost.	(3) Not allowed.	4	F. and A2.
		(4) Suitable steel drums fitted with non-corrosive pressure relief valve or vent.	25%	40 gal.	(4) Stout slatted crates so arranged that the relief valve projects.	—	(4) do	(4) do.	4	F. and A2.
DI-NITRO-ORTHO-CRESOL	Supporter of combustion. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Not in the same hold as inflammable substances and not in contact with lead or compounds of lead. Away from food and foodstuffs.	(1) Not allowed.	4	C.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable barrels, or cases of wood with polythene liners, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	C.
DI-NITRO-PHENOL wet with not less than 15% of water calculated on the wet weight.	Becomes explosive when dry.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from acids and inflammable substances and stowed so as not to come in contact with lead or heavy metals or salts of these metals soda and any compound of sodium, or any chlorate, nitrate or other oxidising agent	(1) Not allowed.	3	C.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is th greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
DI-NITRO-PHENOL wet with not less than 15% of water calculated on the wet weight. (*Contd.*)		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	(2) —	—	(2) On or under deck. Away from acids and inflammable substances and stowed so as not to come in contact with lead or heavy metals or salts of these metals, soda and any compound of sodium, or any chlorate, nitrate or other oxidising agent.	(1) Not allowed.	3	C.
DI-NITRO-PHENOLATES (Di-Nitro-Phenates) wet with not less than 33⅓% of water calculated on the wet weight.		AS FOR DI-NITRO-PHENOL								
DI-NITRO-RESORCINOL wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	3	—
		(2) Suitable barrels or cases of wood, effectively closed Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected	—	—	(2) —	—	(2) do.	(2) do	3	—
FERROCERIUM (e.g. lighter flints).	Dangerous from its power of sparking in air when struck.	(1) Tins or cans of suitable make, effectively closed	—	2 cwt.	(1) Packed in wooden cases	—	(1) On or under deck. Not in the same hold or compartment as inflammable substances or strong supporters of combustion.	(1) As for cargo ships.	4	—
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do	—
		(3) Suitable barrels or cases of wood, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—
HESSIAN (Burlap) BAGS, New.		NO RESTRICTIONS								

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
HESSIAN (Burlap) BAGS, Used.	May be hazardous through contamination from previous contents, e.g. very inflammable if impregnated with sodium nitrate. Possibility of spontaneous combustion if impregnated by oil seeds.	Bales, compressed reasonably tightly and bound with wire, metal hoops, rope, rattan or withes	—	—	—	—	On or under deck. Away from inflammable substances. Particular care necessary according to commodity previously contained in bag.	Not allowed, unless continuously used for inert material.	5	H
NITROCELLULOSE wet with not less than 25% of water calculated on the wet weight. Must not contain more than 12·3% nitrogen.	Becomes explosive when dry	Any suitable airtight container	—	—	—	—	On or under deck. Containers should be inspected and any leakers rejected.	do	3	—
PICRIC ACID wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry.	Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	—	—	On or under deck. Away from inflammable substances and stowed so as not to come in contact with lead or other heavy metals or salts of these metals, soda or any compound of sodium or any chlorate, nitrate or other oxidising agent.	Not allowed.	3	—
POTASSIUM SULPHIDE, fully hydrated and fused.	In contact with acid evolves hydrogen sulphide gas.	Any suitable container of sufficient strength to prevent any escape of the contents.	—	—	—	—	Under deck. Away from acids.	As for cargo ships.	4	—
RADIO-ACTIVE SUBSTANCES.	Emit rays which may be harmful if not shielded.									
ALL SHIPMENTS OF RADIO-ACTIVE MATERIAL MUST BE SPECIALLY APPROVED BY THE MINISTRY OF TRANSPORT AND CIVIL AVIATION.										
SILVER PICRATE wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry.	(1) Glass or earthenware containers of suitable make, effectively closed. Stoppers must not be made of glass	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from inflammable substances and stowed so as not to come in contact with lead or other heavy metals or salts of these metals, soda or any compound of sodium, or any chlorate, nitrate or other oxidising agent.	(1) As for cargo ships.	3	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SILVER PICRATE wet with not less than 33⅓% of water calculated on the wet weight. (*Contd.*)		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	(2) —	—	(2) On or under deck. Away from inflammable substances and stowed so as not to come in contact with lead or other heavy metals or salts of these metals, soda or any compound of sodium, or any chlorate, nitrate or other oxidising agent.	(2) As for cargo ships	3	—
SODIUM AZIDE	Solid. Poisonous. In contact with moist air and acids will give off a poisonous gas. When directly heated (to 350°C.) will decompose with formation of metallic sodium. If it becomes heated gradually through proximity to a fire it may explode with considerable violence.	Tinned iron containers of suitable make, hermetically sealed.	—	—	Packed with insulating material, such as woodwool, in wooden cases.	—	On or under deck. Away from living quarters (see definition (B), page 5), food, foodstuffs, acids and all combustible cargo It must not come in contact with copper, lead or other heavy metals or their compounds.	do	4	C.
SODIUM DI-NITRO-ORTHO-CRESOLATE wet with not less than 30% water calculated on the wet weight.	Becomes explosive when dry but is less sensitive than Picric Acid. Poisonous	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	—	—	(1) On or under deck. Not in the same hold as inflammable substances and not in contact with lead or compounds of lead. Away from food and foodstuffs	(1) Not allowed.	3	C.
		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	—	—	(2) do	(2) do	do.	C.
SODIUM SULPHIDE, containing not less than 30% water of crystallisation.	In contact with acid evolves hydrogen sulphide.	Any suitable container of sufficient strength to prevent any escape of the contents	—	—	—	—	Under deck. Away from acids.	As for cargo ships	4	—

Appendix C

History of the Development of Rules for the Carriage of Explosives in Ships

1. Prior to the First World War, the Board of Trade had not issued any detailed rules as to the carriage of explosives in ships There was in existence a Memorandum relating to the Carriage of Dangerous Goods and Explosives in Ships, but as regards explosives this merely said that "No objection need be raised to the carriage of explosives if they are packed as required by the Order of the Secretary of State, are enclosed in a substantial magazine or compartment and are surrounded by non-inflammable goods". The Memorandum also included extracts from the Explosives Act, the various Orders issued by the Home Office under that Act, the Model Code of Harbour Bylaws issued by the Board of Trade for the guidance of Dock and Harbour Authorities and extracts from the Regulations made by the Transport Department of the Admiralty for the conveyance of Government explosive stores

2. The Model Code included rules for the stowage of explosives in ships in the harbour which in addition to requiring the holds be free from grit and otherwise clean, contained rules as to the separation of the different classes of explosives from one another and their separation from dangerous cargo such as matches, petroleum, calcium carbide, mineral acids, etc.

3. The Transport Department Regulations divided service explosives into three groups. Of these the first group included such substances as cordite gunpowder, dynamite, dry guncotton and picric acid which had to be stowed in a magazine. Groups two and three did not require a magazine but had to be stowed in a "partitioned-off space" or in boxes Specifications for magazines, "partitioned-off spaces" were provided. The latter were similar but subject to less onerous conditions than magazines. The boxes were, in effect, portable magazines which could be used for quantities of explosives up to 2 tons.

4. In practice, therefore, practically all commercial explosives except safety cartridges and fuzes and many service explosives were carried in magazines. During the First World War discussions took place between the Marine Department of the Board of Trade, the Ministry of Shipping and the Service Departments with a view to allowing relaxations from this practice where this could safely be done and rules were drawn up which allowed a number of types of ammunition to be carried without a magazine but with special stowage away from other dangerous goods An amended specification for magazines was also drawn up These rules were published towards the end of the war and were later reproduced in the revised Dangerous Goods Memorandum issued by the Board of Trade in 1924

5. The subject was considered by the Committee, appointed by the Board of Trade in 1930, to consider the rules as to the carriage of dangerous goods and explosives in ships and that Committee adopted them, with certain amendments and with the addition of the rules made by the Home Office under the Explosives Act for the Classification and Packing of Explosives. The rules are set out on pages 25 and 38 of the Appendix to the Committee's Report.

It may be noted that the rules were stated not to apply to Government explosives, so far as these were shipped under special regulations laid down by the Government authority concerned. The rules were, however, with the necessary amendments and amplifications, adopted by the Sea Transport Department (which had by that date been transferred to the Board of Trade) for regulating the carriage of service explosives in ships on commercial services.

6 The rules operated satisfactorily for a number of years, but just prior to 1939, the great increase in the quantities of commercial explosives being shipped led to practical difficulties, particularly as regards the parts of a ship in which magazines might be constructed and explosives not requiring magazines might be carried and several of the Board of Trade surveyors made suggestions for amending the rules As a result of consultation between the Ministry of Shipping, then the Department dealing with the matter, and the Chief Inspector of Explosives at the Home Office, a meeting was held early in 1940 between representatives of the Ministry and the Chairman and certain members of the Explosive Storage and Transport Committee. This is a standing Committee which deals with service explosives and regulates the storage and transport of all service ammunition and explosives in this country. As a result of this meeting it was agreed that a Sub-Committee of the Explosive Storage and Transport Committee should be formed, to be entitled The Sub-Committee on Sea Transport and including, in addition to representatives of the Committee, representatives of the Ministry of Shipping (later the Ministry of War Transport) and of the Shipping Industry. As the Sea Transport Department of the Ministry were responsible for the loading of Government explosives in Merchant Ships and as the Transport Regulations were already under revision in consequence of changes which had been made in the classification of service explosives and the wide increase in their character, it was found most convenient first to deal with loading of Government explosives in what were entitled "freight ships". These were ships primarily engaged in commercial services but in which the Director of Sea Transport had requisitioned space for the carriage of Government stores, including explosives The intention of this procedure was to prepare a complete revision of the rules for freight ships and then see whether they could be adapted so to cover the carriage of commercial types of explosives. The revised rules were drawn up and first published by the Ministry of War Transport in 1942 as an appendix to the Sea Transport Regulations under the title Conveyance of Government Explosives in Freight Ships during the Present Emergency (T 152). Simultaneously, a circular was published defining the manner in which the revised rules were to be applied to the carriage of commercial explosives. Advantage was taken of the publication of this document to bring up-to-date the rules as to the carriage of dangerous goods in ships, no comprehensive list having been published of the changes and additions which had been made since the publication of the Dangerous Goods Report in 1933. While revising the rules the Sub-Committee on Sea

Transport went very comprehensively into the question, dealt with to some extent in the 1933 Regulations, of the degree of separation which should be observed in stowage between explosives and other kinds of dangerous goods, and drew up detailed rules on the subject. These were published, together with the additions to the list of dangerous goods, in Circular 1740 by the Ministry of War Transport in 1942, later superseded by Circular 1816 issued in 1947.

The rules were kept under constant review during the war by the Sub-Committee on Sea Transport, which met at frequent intervals for the purpose of dealing with new types of explosives and weapons and the various kinds of dangerous goods which came forward from time to time. Towards the end of the war, as the question of the shipment of commercial explosives had begun to come active, the Sub-Committee had also to consider how commercial explosives should be stowed in relation to Government explosives and how these commercial explosives should be related to the service classification which determined the nature of the stowage which was required for them. It was finally decided to amalgamate the rules and these were published as Circular 1817/T.152 published in October, 1947.

APPENDIX D.

LABELS

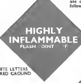
See Appendix B, Part I, para. 10

THE SIZE OF THE LABELS IS TO BE NOT LESS THAN 4 INS. X 4 INS

LABEL A1

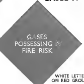
Note : The flash point to be inserted may be the actual one or within one of the following ranges:

60°F—72°F
40°F.—59°F
20°F.—39°F
0°F.—19°F
Under 0°F



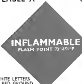
WHITE LETTERS ON RED GROUND

LABEL A3



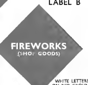
WHITE LETTERS ON RED GROUND

LABEL A2



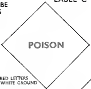
WHITE LETTERS ON RED GROUND

LABEL B



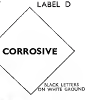
WHITE LETTERS ON RED GROUND

LABEL C



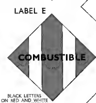
RED LETTERS ON WHITE GROUND

LABEL D



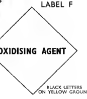
BLACK LETTERS ON WHITE GROUND

LABEL E



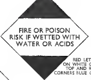
BLACK LETTERS ON RED AND WHITE ALTERNATE VERTICAL STRIPES

LABEL F



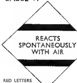
BLACK LETTERS ON YELLOW GROUND

LABEL G



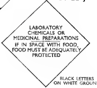
RED LETTERS
ON WHITE GROUND
TOP AND BOTTOM
CORNERS BLUE GROUND

LABEL H



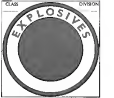
RED LETTERS
ON WHITE GROUND
TWO HORIZONTAL
BLACK STRIPES

LABEL J



BLACK LETTERS
ON WHITE GROUND

EXPLOSIVES LABEL



RED CENTRE SURROUNDED BY A
WHITE CIRCLE SURROUNDED BY
A NARROW RED CIRCLE ON A
YELLOW GROUND. RED LETTERS

NOTE—SEE ALSO SECTION 1, PAGE 52
FOR THE APPROPRIATE LABEL
FOR GOVERNMENT EXPLOSIVES

Al348 Wt.2959 10 065 9/57 Gp 961 F & C. Ltd

Appendix E

REPORT OF THE DEPARTMENTAL COMMITTEE ON THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

To The Hon. John Scott Maclay, C.M.G., M.P.,
Minister of Transport

Sir,

1. We were appointed by your predecessor on the 30th July, 1946, with the following terms of reference —

> "To review the existing Rules for the carriage of dangerous goods and explosives in ships, and to advise what alteration, if any, should, in the light of modern developments and experience, be made to the said Rules".

2. We have held 104 meetings and the compilation of the Report which we now have the honour to submit has involved a vast amount of detailed work.

INTRODUCTORY

3. The previous Committee on the Carriage of Dangerous Goods and Explosives in Ships was appointed in February, 1930, and reported in March, 1933. The Committee was asked to consider the then existing Board of Trade Memorandum on the Carriage of Dangerous Goods and Explosives in Ships, and advise what alterations were desirable, particularly having regard to the provisions of the International Convention on Safety of Life at Sea, 1929, which provided for the making of Regulations on the subject to have international effect. The Board of Trade Memorandum referred to had been in existence for many years, and in its earlier form (issued prior to the first world war) it contained the principal statutory provisions concerning explosives and petroleum, and notes on a number of other dangerous substances commonly transported by sea. These notes included recommendations on packing and stowage, but were not arranged according to any definite plan.

4. After the first world war, owing to the great increase in the number of dangerous chemicals used in commerce, it became necessary to expand the Memorandum very greatly. At the same time, the Memorandum was re-arranged, the principal feature being the inclusion of an alphabetical list of all the substances which had come up for consideration giving in narrative form under each heading the properties and the methods of packing and stowage recommended. This arrangement, though very convenient for reference purposes because it was in a sense its own index, had the defect that no general plan for substances of similar characteristics could be readily deduced, and there was no opportunity for setting out general rules concerning the relation to be observed between the different classes of substances in their stowage on board ship.

5. To remedy these defects, the 1930 Committee decided upon a system of classification based on the grouping of substances having similar properties, combined with a comprehensive index, and the draft Rules recommended in the Appendix to their Report followed this plan, except as regards explosives and compressed gases. We agree with the arguments set out in paragraphs 5 to 8 of our predecessors' Report, and have followed the same system in our draft Rules, including those for the compressed gases, though we have not found it practicable to deal in the same way with explosives. As regards these, we consider that the Rules set out in the Circulars recently issued by your Department are satisfactory, and we have adopted them with certain minor amendments. A brief history of the development of the Rules on the carriage of explosives in ships is contained in Appendix C, page 226.

INTERNATIONAL ASPECT

6. Regulation 3, Chapter 6, of the International Convention for the Safety of Life at Sea, 1948, deals with the carriage of dangerous goods in ships on international voyages. It contains a classification of dangerous goods, restrictions on the carriage of explosives in passenger ships, a demand for adequate precautions against fire, and an undertaking that dangerous goods should be properly marked and a special list carried in the ship of the dangerous goods on board. The contracting Governments agreed to issue detailed Rules to supplement the Regulations.

7. In Recommendation 22 the Safety Conference recommended further study with the object of drafting International Regulations, including, if practicable, marking by distinctive symbols or designs to distinguish the kind of danger presented by particular goods.

8. We strongly support the views expressed at the Conference. The classification we have adopted is similar to that included in the Convention, and from the first we have borne in mind the need to draft Rules which may be suitable for international adoption. British ships carry goods in all parts of the globe, and a uniform system of Rules for dangerous goods is of great importance to our trade.

9. The Rules drawn up by our predecessors have already been adopted in substance by many of the leading maritime countries. Where the practice of any foreign country has differed substantially from our own, we have carefully considered whether the British Rules could be altered with advantage. In particular, we have made a close study of the United States Coastguard Regulations entitled "Explosives or Other Dangerous Articles on Board Vessels". No great changes in British practice seem called for, but we have included certain substances and modes of packing which might not have been necessary had we confined ourselves to the trade of the United Kingdom.

10. We believe that the Rules we recommend can form the basis of an international code.

11. Before leaving the international aspect, we would point out that as the goods with which we are concerned will probably be carried by inland transport to and from ships, no international system of packing and marking can be wholly effective unless it is accepted by inland transport throughout the world. In general, the carriage of dangerous goods by sea is more hazardous than the carriage of similar goods by inland transport, and we therefore believe that any international system for packing and labelling dangerous goods for carriage by sea should be satisfactory for inland transport, and should be capable of co-ordination with the Rules applicable to such transport. With this in view we have taken careful cognisance of the Regulations contained in "General Classification of Merchandise—Dangerous Goods by Merchandise Trains", issued by the Railway Clearing House.

CLASSIFICATION OF SUBSTANCES

12. The classification we have adopted is substantially that used by our predecessors and is as follows —

(i) Explosives
(ii) Compressed Gases: Permanent, Liquefied and Dissolved
(iii) Corrosive Substances
(iv) Poisonous Substances
(v) Substances Giving Off Inflammable Vapours.
(vi) Substances which become Dangerous by Interaction with Water.
(vii) Strong Supporters of Combustion and Readily Combustible Solids.
(viii) Substances which become Dangerous by Interaction with Air or are Liable to Spontaneous Combustion.
(ix) Any other substances which experience has shown or may show to be of a dangerous character, including Radio-Active Materials.
(x) Medicinal and Laboratory Chemicals in Limited Quantities.

Very early in the life of the Committee, Sub-Committees were appointed to deal with each of the above categories. The detailed schedules in the Appendix are the work of those Sub-Committees, although naturally much had to be done by the main Committee in bringing their detailed recommendations to a uniform basis.

REPRESENTATIONS OF TRADE INTERESTS

13. These detailed schedules have been prepared with great care. As explained above, we have considered various practical codes which had relevance, and we believe that our recommendations represent the best modern practice. The schedules have also been submitted confidentially to appropriate Trade Associations, and individual manufacturers having special experience of certain substances have been consulted; their recommendations have been carefully studied and their practices incorporated where suitable. Similarly, through your Marine (Safety), later the Marine (Navigational Aids), Division, which is in contact with Marine Departments abroad, we have been able to take cognisance of the views of various overseas maritime authorities.

DEGREE OF DANGER

14. A disadvantage of the classification of substances according to the type of hazard is that all the substances in one group tend to be regarded as having an equal degree of danger. In one instance a port authority put prohibitive restrictions on ships carrying substantial quantities of any of those substances listed by our predecessors as " strong supporters of combustion ", regardless of the fact that this group included substances so comparatively innocuous as the perborates.

15. Similarly, we have received complaints that shipmasters tend to regard cylinders of the relatively harmless gas carbon dioxide with the same apprehension as cylinders containing a dangerous gas such as carbon monoxide. Cylinders containing these gases are in the same group, and are covered by rather similar stowage conditions.

16. Our predecessors did not regard this disadvantage as outweighing the advantage of orderly classification, and this system is now universal. If a substance has to a substantial degree the type of hazard characteristic of the group, we think it must be included. In setting out the properties of substances and our recommended methods of packing and stowage, great care has been taken to differentiate between various degrees of hazard.

MAKE-UP OF SCHEDULES

17. The increasing complexity of this subject requires that our schedules contain more columns than those of our predecessors. We have added columns for the outer packing and for the type of label required. We have also added a column giving the restrictions on the carriage of the substance in ships carrying explosives. The comprehensive index enables all the information to be readily obtained.

PASSENGER SHIPS

18. We have followed our predecessors in treating as cargo ships those passenger ships designed to carry a number of passengers not exceeding 25, or one-tenth of the number of feet in the ship's registered length, whichever is the greater. Such passenger ships are really cargo ships with accommodation for passengers. While it is quite proper that they should be subject to the same Regulations as other passenger ships in respect of construction, life-saving appliances and wireless, we believe that they should be treated as cargo ships so far as the carriage of dangerous goods is concerned. Much of our trade is carried in ships fitted with accommodation for a few passengers. If such ships were not grouped with cargo ships, either trade in some essential articles of commerce, e.g. acids, or the passenger services to some parts of the world would be seriously hampered.

19. In the case of other passenger ships, we consider that the criterion should be the number of passengers actually carried, and that the carriage of dangerous goods should be permitted on a particular voyage where the number of passengers does not exceed 25 or one-tenth the number of feet in the ship's registered length, whichever is the greater.

20. As the result of experience and modern developments, we have been able to relax in many cases the restriction on the carriage of dangerous goods in passenger ships. Nevertheless, important restrictions remain.

21. The position is a little different for explosives. Regulation 3 (*c*) of Chapter 6 of the International Convention for the Safety of Life at Sea, 1948, lists certain explosives which may be carried in passenger ships. Other explosives may be carried in passenger ships only if there are " special approved safety measures ". In this Regulation a passenger ship means a ship carrying more than twelve passengers. We have assumed that the term " safety cartridges " as used in the Convention includes all the items in the Safety Class of the Home Office Authorised List (e.g. fog signals and percussion caps, as well as cartridges properly so called) and have worded the Explosives Rules accordingly. We have also recommended that small fireworks and a limited quantity of ship and aircraft distress signals should be allowed in passenger ships subject, of course, to suitable stowage space being available. We are not, however, able to suggest any " special approved safety measures " over and above those already provided for in the general rules applying to all ships carrying explosives and consider, therefore, that should it prove necessary on any particular occasions to carry other explosives in passenger ships, such cases must be dealt with by your Department as exceptions from the Rules.

EMIGRANT SHIPS

22. Under modern conditions the difference between emigrant and other passenger ships has tended to disappear, at least so far as ships clearing from the United Kingdom are concerned. We have therefore omitted from the schedules all reference to emigrant ships. The Emigration Officer has the full responsibility of clearing these ships, and we think it unnecessary to lay down

any special rules for his guidance. Usually, those for normal passenger ships will be adequate, but he will be the best person to judge what special restrictions should be applied in exceptional cases.

Section 1: Explosives

23. The recommendations made by our predecessors were concerned with explosives contained in the Home Office Authorised List. Separate instructions had been issued for the carriage of Government explosives and during the war these were completely revised by the Explosives Storage and Transport Committee. The latter instructions gave explicit rulings on general safety conditions, the types and position of stowage, magazine or otherwise, required for all Government explosives and detailed instructions on the construction of magazines. Subsequently a list of commercial explosives was incorporated, each explosive being given an equivalent Service grouping. The Committee has substantially adopted these instructions with minor alterations, the main relaxation being to permit the carriage on passenger ships of shop fireworks as defined by the Home Office (Order in Council 16A, dated 11th May, 1906, made under the Explosives Act, 1875) and a limited quantity of ship and aircraft distress signals additional to those belonging to the ship's equipment. The list of authorised commercial explosives is kept up to date by an annual list published by the Home Office, but it will be necessary for your Department to give the stowage conditions for any newly authorised explosives. Similarly, the Ministry will have to keep up to date the list of Government explosives, together with stowage conditions for each item. This could be done by amendments published from time to time, or, as in the case of the Home Office list, by publication annually.

Section 2: Compressed Gases: Permanent, Liquefied and Dissolved

24. In dealing with compressed gases in cylinders, we have had the advantage of advice from both the Home Office and the National Physical Laboratory.

25. Since our predecessors' Report, much valuable experience has been gained in the shipment of gas cylinders, which are now in common use for many kinds of gases. As a result of this experience, we have been able to relax considerably the stowage conditions for the inert gases such as carbon dioxide, nitrogen, etc. For these gases the only risk is in the cylinders bursting, but then it is most unlikely that the cylinders will do more than split, and thus release the contents rapidly. Even this risk is reduced if a bursting disc is fitted, as is usually the case with carbon dioxide. We have therefore differentiated carefully between these gases and the inflammable or poisonous gases such as acetylene or carbon monoxide and hydrogen cyanide, which, if they escape, might cause serious loss of life. We have been able to draw up the schedule for compressed gases on the same lines as those for other classes of goods, and have taken considerable care to set out the characteristic properties of each gas to help those who have to handle the cylinders on ships. We have also made provision for the carriage of gases in large welded containers.

Section 3: Corrosive Substances

26. In considering the material for the construction of packages, we have had regard to the effect of technical development which has taken place in the field of corrosion-resisting lacquers, metal alloys and plastics. Wherever possible, we have refrained from specifying the exact materials of which containers should be made, and instead have sought to frame our recommendations in such a way as to enable technical advances automatically to be taken advantage of, while at the same time seeking to ensure that all containers are such as may be safely used.

Section 4. Poisonous Substances

27. In dealing with poisons we have given careful consideration to the desirability of the inclusion of poisons which do not give off poisonous gases or vapours, and which are not considered to constitute a hazard to the safety of the ship or those aboard. The main risk with these substances is the contamination of food cargoes, and this subject is of such importance that we consider Rules are necessary for the packing and stowage of certain of these poisons. We have therefore included in the Schedule a number of poisons which do not give off poisonous gases or vapours, but we have included in the heading to this Section a note to the effect that these poisons do not normally constitute a risk to the vessel, passengers or crew.

Section 5: Substances Giving Off Inflammable Vapours

28. This Section includes all those substances with a flash point of 150° F. and below, and we have followed our predecessors in differentiating between those with a flash point under 73° F. and those with a flash point of 73° F. and over. Except in the case of passenger ships, we consider it is unnecessary to make more stringent Regulations for the packing and stowage of substances immiscible with water than for those miscible with water, and the existing differentiation between such substances has been discontinued on practical grounds. A list of inflammable substances which are commonly carried in ships has been prepared (Section 5), with the approximate flash point and the miscibility with water indicated against each substance. Subsidiary hazards are also indicated.

29. The Schedule is similar, therefore, to that used by our predecessors, but we have included in it certain substances such as carbon disulphide, di-ethyl ether, nickel carbonyl, cellulose enamels and lacquers, pastes and semi-solids and potable spirits, which were dealt with in a separate list.

30. We do not consider it practicable to have detailed packing and stowage conditions against individual inflammable substances, as has been done in other Schedules, because of the very large number of substances involved and the wide variation which is possible in the flash point of different grades of the same named substance.

31. We have given careful consideration to the amount of air space or ullage to be left in containers of inflammable liquids and, except for glass containers, and a few substances specially indicated in the Schedule, we consider that the figure should be calculated by the use of a formula based on the co-efficient of expansion of the liquid concerned. The formula has been incorporated in the Schedule.

Section 6: Substances which become Dangerous by Interaction with Water

32. In the 1933 Report, substances which become dangerous by interaction with water or air were grouped together in one Section. We consider that substances which become dangerous by interaction with air have a closer relationship with substances liable to spontaneous combustion, and this Section has therefore been confined to substances where the main risk is that of dangerous interaction with water.

Section 7: Strong Supporters of Combustion and Readily Combustible Solids

33. This class of dangerous goods has been brought into prominence by the tragic explosions at Texas City and Brest in cargoes of ammonium nitrate. In dealing with ammonium nitrate, we have had the advantage of advice from the Working Party set up by the Home Secretary. In addition to extensive

small scale experiments, large scale experiments were carried out on Heligoland. As a result of this thorough investigation we are satisfied that ammonium nitrate in the commercially pure form manufactured in this country is not in itself an explosive. So far as we can ascertain, explosions have occurred only with ammonium nitrate mixed with an unapproved proportion of organic material.

34. In our opinion, the very severe restrictions on ammonium nitrate which have been introduced by certain Authorities are quite unjustified in the case of commercially pure ammonium nitrate, which in itself has no explosive risk, and is no more liable to increase the fire risk than many of the other substances in this group.

35. We have given particular consideration to the carriage of potassium chlorate and strongly recommend that, when carried in appreciable quantities other than in glass or earthenware containers in cases, or in tins in cases, the substance should be packed in new iron or steel drums or the like. We have considered carefully whether we should be justified in recommending that the existing permission to pack this substance directly into paper-lined wooden containers or into paper bags in wooden cases should be revoked. We have before us evidence that the material so packed has been carried in ships in very large quantities over a long period of years, and continues so to be carried with, so far as we can ascertain, only one serious accident, and that during a war period. Such a record constitutes very strong prima facie evidence that these packings are, in practice, safe packings; in the face of such evidence the majority of the Committee do not feel justified in recommending that the existing permission, advocated by our predecessors, be revoked. We nevertheless feel that the presence of potassium chlorate, separated by paper only from the wood of the case, may constitute a serious potential danger and we recognise that the existing permission for the packings mentioned may have to be reviewed in the light of further experience.

Section 8: Substances which become Dangerous by Interaction with Air or are Liable to Spontaneous Combustion

36. This Section is unusual in that it contains many substances of natural origin. Individual substances differ widely in composition and physical characteristics, and we have not thought it advisable to lay down such precise rules for the packing and stowage of such substances as for manufactured materials; but where considered necessary we have tried to ensure that the commodity will be offered for shipment in a safe condition. A class of hazard with which we have had to deal is exemplified by an unusual series of outbreaks of fire in cargoes of sunflower seed expeller cake from the River Plate. The evidence was carefully considered, and our recommendations based accordingly.

Section 9: Other Dangerous Substances, including Radio-active Material

37. Radio-active material is likely to be transported in increasing quantities, and we have consulted authorities on the subject. There are two classes of risk, namely to animal, including human life, and to cargo. The risks occur in the raw material and in the finished product. The finished product is so small in bulk that it can be packed in adequate screening material, but it is liable to affect undeveloped photographic film or plates, even at some distance. Further consideration of this subject will be necessary before detailed rules for packing and stowage can be prepared, and, as an interim measure, we have recommended that particulars of all proposed shipments of radio-active material should be submitted to your Department for approval.

Section 10: Medicinal and Laboratory Chemicals in Limited Quantities

38. This Section contains our recommendations for consignments of laboratory chemicals or medicinal preparations in limited quantities. This is an important trade, and we have carefully considered the methods by which it can be carried on with safety to the ships concerned. Sub-section A contains our recommendations as to the permitted limit of quantity in the case of certain substances. We have prepared a table of substances which are incompatible and which, if carried in the same packing case, might give rise to serious danger. A draft of a certificate to be required from shippers of such chemicals is submitted in the above mentioned sub-section.

STOWAGE

39. In giving conditions for stowage we have tried to eliminate phrases which have no precise meaning, such as "in a cool well-ventilated space", or "allowed in small quantities".

40. We have given two definitions of "away from living quarters", and have said in the Schedules which definition is intended for the particular case. It has been pointed out by the shipping representatives on the Committee that there is no substantial difference in temperature and ventilation between one ordinary cargo compartment and another, except in the immediate vicinity of a bulkhead next to the engine room. The vagueness of the phrase "allowed in small quantities" must have been irksome to both Masters and Surveyors. Where limitation is necessary we have attempted to give the exact quantity permitted.

MARKING AND LABELLING

41. Section 446 of the Merchant Shipping Act, 1894, requires dangerous goods to have their nature distinctly marked on the outside of the package. Similarly, Regulation 3 (*h*) of Chapter 6 of the International Convention for the Safety of Life at Sea, 1948, requires that shipments of dangerous goods shall be marked with a distinctive label or stencil. We have designed a series of labels which we believe will meet these requirements.

42. Though it is important that the nature of the hazard should be clearly marked on each package, we deprecate the extensive use of the word "dangerous". If this term is applied to all dangerous goods irrespective of the degree of hazard, the label tends to be disregarded in the everyday handling of a cargo. We strongly recommend that cautionary labels should be reserved for cargo with an exceptional degree of hazard, and have made detailed recommendations accordingly.

43. With a view to possible international agreement on a common form of labelling, the ideal would, perhaps, have been to attempt to draft pictorial labels which would indicate the hazard and which could be understood in any country. Such an ideal would be difficult of achievement. We made a close study of the pictorial labels agreed under the Berne Convention for rail transport in Europe but we are of the opinion that, generally speaking, these labels are too alarming. With the international aspect in view, we have reduced the wording on the labels to a minimum and we consider that, provided the shape and colour of the label is always retained, the wording could be in any language and the hazard could still be readily identified anywhere in transit.

44. We have been in close consultation with British Railways on the subject of labelling dangerous goods but we regret that it was not found possible to reach agreement on a common set of labels which would be suitable for dangerous goods carried by rail and/or sea.

45 The shipping labels will, we understand, be used for the carriage of dangerous goods by road in the United Kingdom.

46. We need hardly emphasise the great advantages to commerce if a single system of labelling or marking of dangerous goods could be accepted throughout the world. We urge most strongly that this subject should figure prominently on the agenda of any international meeting on the carriage of dangerous goods which may be called under the terms of the International Convention for the Safety of Life at Sea, 1948

IMPLEMENTATION

47. The Rules drafted by our predecessors were, in the main, accepted by the Board of Trade, but were not given statutory sanction. They applied to all shipping loading in United Kingdom ports. The Rules have been readily accepted by British shipowners for ships sailing from this country where enforcement is possible by surveyors, and they have served as guidance for British shipping loading abroad. They have already been accepted in many overseas maritime countries, where indeed in some cases they have been given full statutory authority.

48. This method of voluntary acceptance has given great flexibility, but without the goodwill of all British shipowners might have led to difficulties. Under the International Convention of 1948, the United Kingdom has accepted the obligation to issue detailed rules to interpret and supplement the Regulation in the Safety Convention (Regulation 3, Chapter 6, and Annex D, Recommendation 22).

49. We are advised that such rules should be statutory; in which case it is important that they should be made flexible and be such that they neither hamper development nor unnecessarily restrict trade. We observe that under the Merchant Shipping (Safety Convention) Act, 1949 (Section 23 (2) (*a*)), you have the power to make Rules for British ships wherever they load cargo. We are of the opinion that the full exercise of this power would impose a serious handicap on British shipping in foreign ports and, in the event of Statutory Rules being issued, we strongly urge that provision is made for our shipping to be permitted to continue to carry dangerous goods packed in accordance with the regulations of the foreign port of loading as is done at present.

50 It is important that the powers should not be exercised in such a way as to hamper trade unnecessarily, and in particular there should be latitude to deal with exceptional cases and with experimental shipments in alternative packings or stowage.

51 Undoubtedly, frequent amendments will be necessary to these Rules as new substances are added to the lists, and new forms of packings are submitted for approval. A number of independent amendments soon becomes confusing and we suggest that the amended Schedules be re-issued as often as practicable.

52. We also note that under the Merchant Shipping (Safety Convention) Act, 1949, Section 23 (3), the responsibility for compliance with the Rules is placed on the owner or master of the ship, who may thus be made responsible for the packing of dangerous goods although unable to establish if this conforms to the regulations. This is likely to lead to difficulty and we strongly advise that shipowners should be consulted on this point before Statutory Rules are prepared.

STANDING COMMITTEE

53 The whole subject of dangerous goods is of increasing complexity, and we consider it important that you should have expert advice at hand to guide development of policy. Such advice is at present given for commercial explosives by the Home Office, for Government explosives by the Explosives Storage and Transport Committee, and for chemicals by the Government Chemist. This informal *ad hoc* system is not entirely satisfactory, and we suggest that in addition some continuing body, more or less with the composition of our Committee, should be formed where the problems could be discussed from both the technical and shipping aspects, and conclusions satisfactory to all parties reached.

54. We deeply regret that we have to record the death of Mr. A. F. Taylor. Mr. Taylor was in full agreement with our recommendations, and, at the time of his death, our Report was complete except for the Signatures of the members of the Committee.

55 The Committee wish to acknowledge the very valuable assistance which they have obtained from all the interests which, as explained above in paragraph 13, they found it advisable to consult in the course of their work.

56. In conclusion, the Committee desire to express their appreciation of the very great assistance they have received in the preparation of the Report from their Secretary, Mr. E. F. Callow. The mere volume of the duties imposed on him is self evident, but we should like to emphasise, in addition, how much detailed study was involved, requiring a thorough understanding of the principles involved in the arrangement of the material of the Report and the application of those principles to the co-ordination of the numerous detailed rules contained in the Tables; all of this has thrown a heavy burden on him. We also desire to record our appreciation of the help given us by his colleague Miss E. M. Collman who has assisted him throughout and carried on the Secretarial work successfully during a period of some months when Mr. Callow had unfortunately to be absent from duty owing to an accident which occurred whilst he was in Heligoland witnessing the trials with ammonium nitrate.

We have the honour to be,
Sir,
Your obedient Servants,

H. E. WATTS (*Chairman*)
C. H. BOYD
A. W. CLARKE
B. A. ELLIS
E. GARRATT
R. S. HASKEW
F. C. V. HOLMES
H. G. McDAVID
A. J. MALACRIDA
C. M. OXTON
J. C. TAYLOR

E. F. CALLOW
(*Secretary*).

13th November, 1951.

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Sodium Nitrate (Chile Saltpetre)	7A	178
Sodium Nitrite	7A	179–180
Sodium Perborate (except the tetrahydrate, which is non-hazardous)	7A	180–181
Sodium Perchlorate	7A	183
Sodium Permanganate	7A	185–186
Sodium Peroxide (Sodium Binoxide, Sodium Dioxide, Sodium Superoxide, Oxone)	7A & 9	190, 217
Sodium Phosphide	6	163
Sodium Sulphate Acid (See "Sodium Hydrogen Sulphate.")	3	99
Sodium Sulphide containing less than 30% water of crystallisation	8 & 9	209, 217
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Sodium Sulphocyanide. (See "Sodium Thiocyanate")	3	102
Sodium Superoxide. (See "Sodium Peroxide.")	7A & 9	190, 217
Sodium Thiocyanate (Sodium Sulphocyanide)	3	102
Spent Mixed Acids (See "Mixed Acids")	3	89, 103
Spirit, High Proof	5	144
Spirit of Ether Nit. B.P.C. (See "Sweet Spirit of Nitre B.P.C.")	5	144
Spirit of Nitrous Ether, B.P.C. (See "Sweet Spirit of Nitre, B.P.C.")	5	144
Spirits of Salts. (See "Hydrochloric Acid.")	3	87
Spirits, Potable. (See "Potable Spirits")	5	144, 153
Stannic Chloride Anhydrous (Tin Tetrachloride, Tin Chloride Fuming)	3 & 9	103, 217
Straw. (See "Hay, Straw or Bhusa.")	8	206
Strontium Alloys (Non-pyrophoric)	6	164
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Strontium Chlorate	7A	172–173
Strontium Dioxide. (See "Strontium Peroxide.")	7A	190
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Sulphur Chlorides (Sulphur Dichloride, Sulphur Monochloride)	3	103
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Sulphur Trioxide, Liquid, Stabilised	3	106
Sulphuretted Hydrogen. (See "Hydrogen Sulphide")	2	65
Sulphuric Acid of Sp. Gr. exceeding 1·405 (Oil of Vitriol). Not including Oleum and "Nordhausen" Acid	3 & 9	103–104, 217
Sulphuric Acid of Sp. Gr. not exceeding 1·405	3	105
Sulphuric Acid, Fuming (Oleum or "Nordhausen" Acid)	3	105
Sulphuric Acid containing more than 5% Free Sulphur Dioxide (Oleum)	9	217
Sulphuric Ether. (See "Diethyl Ether")	5	142, 148–149
Sulphur Monochloride	9	217
Sulphurous Acid (Sulphur Dioxide Solution)	3	105–106
Sulphuryl Chloride	3 & 9	107, 217
Sunflower Seed Expeller	8	209–210
Surgical Dressings containing small amounts of cyanides	May be carried without restriction	
Sweet Spirit of Nitre B.P.C. (Spirit of Nitrous Ether, B.P.C., Spirit of Ether Nit., B.P.C.)	5	144
Tar Acids (See "Phenol (Carbolic Acid)")	4B	137
Tar, Liquid	5	144
Tartar Emetic (See "Antimonyl Potassium Tartrate.")	4B	120
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Tetrachloroethane (Acetylene Tetrachloride)	4A	118
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Tetraethyl Silicate (Ethyl Silicate)	5	144
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Thallium Nitrate	4B	138
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Urea Hydrogen Peroxide (Hydrogen Peroxide Solid)	7A	191
Uritone. (See "Hexamine.")	7B	193
Urotropine. (See "Hexamine.")	7B	193
Varnish	5	144, 148
Vegetable Black. (See "Lamp Black")	8	206
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THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

Amendment List No. 9 to the 1957 Report of the Standing Advisory Committee

CORRECTIONS

Page 169. Column 8
Amend "hypochlorates" to "hypochlorites"

Page 224. Footnote
Retain the words "Pages 224 A–C are not allotted"

Page 225.
Delete all on page 225 issued as part of Amendment No. 1
Do not remove from volume.
Do not delete, or remove from volume, page 225 issued as part of Amendment No. 9

Page 225A. Right hand column. Table. "Special form radioactive material" column. "Type of packaging: A"
Amend "20cCi" to 20Ci"

Page 225B. Paragraph 3(c)
Amend "Packing" to "Packaging"

Page 225B. Paragraph 4(a)
Amend dose rates to "40 mr/h . . .; 10 mr/h . . . ; 2 mr/h . . . "

Page 225C. Paragraph 9(d). Line 3
Amend "7c" to "7C"

Page 225D. Paragraph 11(g)
Amend "C–512" to "C–5.1.2 of IAEA *Regulations*"

Page 225D. Paragraph 13(a). Line 7
Amend "precatutions" to "precautions"

Page 225E. Annex 1
Amend table, lines VII and VIII, as follows:

"VII	25Ci	25Ci	200Ci
VIII	25Ci	25Ci	200Ci"

BOARD OF TRADE
December 1966

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~~OP. 1100. 102. 110~~
OP. 1100. 102. 020(2)

THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

Amendment List No. 1 to the 1957 Report of the Standing Advisory Committee

Pages:	
5–6 11–12, 17–20, 65–66, 125–126, 155–156, 205–206, 223–224, 224A, 224B, 224C 225–226	Insert the attached pages in the Report and remove those old pages which have similar numbers.

Page 60—Carbon Dioxide Bulbs.
Col. 1. Insert "in suitable metal" after "Dioxide".

Page 88—Hydrofluoric Acid Solution.
Col. 5, Delete "50" and insert "90".

Page 106—Stabilised Liquid Sulphur Trioxide.
Col. 5. Packing (2). Delete "7" and insert "11".

Page 197—Zirconium Metal (Dry).
Col. 2. Delete "or powder".

Page 198—Zirconium Metal (Wet)
Col. 2. Delete "This powder, if allowed to dry out, may spontaneously inflame on exposure to air".

Page 198—Insert a new entry as follows:
Col. 1. "Zirconium Metal Powder (Wet or Dry)".
Cols. 2–11. "All shipments of this material should be referred to the Ministry of Transport and Civil Aviation".

Page 219—Under Note 3 insert the following Note 4:
"Note 4—Hydrazine Compounds should be segregated from caustic alkalis and strong oxidising agents".

Page 236—Index.
Insert "Butane or Isobutane Lighters and Refills". Section "10". Page "224".

Page 238—Index.
Insert "Iron or Steel Swarf". Section "8". Page "206".
Insert "Lighters and Refills containing Butane or Isobutane". Section "10". Page "224".

Page 239—Index.
Insert "Nitrous Oxide Bulbs". Section "2". Page "66".
Insert "Ore Concentrates". Section "10". Page "224A".

Page 240—Index.
Radioactive Substances. Alter Page No. to read "224A–C".

Page 241—Index.
Silver Picrate. Delete Page "224".
Insert "Thorium Ores". Section "10". Page "224A".

Page 242—Index.
Insert "Uranium Ores". Section "10". Page "224A".
Insert "Zirconium Metal Powder (Wet or Dry)". Section "7B". Page "198".

MINISTRY OF TRANSPORT AND CIVIL AVIATION,
APRIL, 1958.

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Appendix B

Recommendations for the Carriage of Dangerous Goods and Explosives in Ships

PART I

PREAMBLE

1. The goods specified in the Sections, with the exceptions therein mentioned, are dangerous and should be packed, labelled and stowed in accordance with the instructions contained in the Sections

2. The Recommendations contained in this Part I are the General Recommendations which must be observed for dangerous goods which are carried on board ship The particular Recommendations applicable to each individual substance will be found in the appropriate sections in Part II.

3. Dangerous substances are classified according to their main characteristics and properties in Part II. There are ten sections. Substances which possess properties fitting them for inclusion in more than one section have been placed in the section appropriate to the most dangerous property from the point of view of carriage in ships, but the Recommendations for packing and stowage have been drawn up with due regard to the whole of the properties A comprehensive index is provided.

4. These Recommendations do not apply to mixtures or solutions containing substances specified as dangerous unless the mixture or solution is such as to constitute a dangerous hazard.

5. Every effort has been made to make the list of substances specified in Part II as comprehensive as practicable, but the non-inclusion of any substance possessing dangerous properties, does not relieve the shipper from responsibility under Section 446 of the Merchant Shipping Act, 1894, for declaring the nature of the substance, and under common law for any damage caused through default.

6. All goods should be regarded as dangerous, the carriage of which may, by reason of their properties, involve risk to the ship or to the persons on board. Details should be submitted to the Ministry of Transport and Civil Aviation when it is desired to ship any substance not included in Part II and thought to possess properties which are dangerous

7. The methods of packing and stowage laid down in Part II are not necessarily the only ones which may be permitted. Full details of any other methods which will ensure equivalent protection should be submitted to the Ministry of Transport and Civil Aviation.

8. In the Recommendations for packings and stowage detailed in Part II, consideration has been given to the properties of substances and to the possible reaction with other substances with which they may be stowed, as well as to outside influences such as rough handling or high temperature, to which the goods may be exposed.

DEFINITIONS

9. For the purpose of these Recommendations the following expressions have the meanings indicated against them .—

Under deck means in a hold or in a covered space which is enclosed between steel bulkheads, and is capable of being effectively closed against the weather

On deck means other than under deck, as above defined.

On Deck only means in an uncovered space, though special deckhouses, having doors which can be continuously open (except in heavy weather), may be used. " On deck only " does not include stowage in a shelter deck space.

Note —Deckhouses and masthouses can be considered suitable for either on deck or under deck stowage.

A shelter deck space is the space contained between the shelter and freeboard decks

Tropical Voyages. Tropical conditions are assumed to exist between the parallels of latitude 30° North and South. Cargo carried on any vessel bound to or from a port in or likely to pass through this area must be packed in accordance with the Recommendations laid down for " Tropical " conditions.

Stowage in relation to living quarters—

Definition (A).—Stowage must not be in a compartment immediately underneath living quarters, unless the deck extends unbroken for a distance of 3 feet from the boundary bulkhead of such quarters

Definition (B).—Stowage must not be in a compartment any part of which is immediately underneath living quarters.

Hermetically Sealed.—A container may be regarded as hermetically sealed if it is so constructed and secured that it is for practical purposes airtight and will maintain its airtightness under all usual conditions.

Effectively Closed.—A container may be regarded as effectively closed if it is so constructed and secured that it is for practical purposes watertight and will maintain its watertightness under all usual conditions.

Minimum Air Space (Ullage).—The percentage indicated in the Schedule, or the percentage calculated by use of the formula specified, means the percentage of free space to be left in a container in relation to the total capacity of the container Nevertheless, liquids except the following may be filled in Winchester bottles conforming to B.S 830 ; 1953 to the extent of 2 5 litres maximum measured at a temperature of not less than 10°C. —

Chloroacetyl chloride
Diphenylmethyl bromide
Fluosilicic acid
Phosphorus tribromide
Phosphorus trichloride
Phosphoryl chloride
Silicon tetrachloride
Stannic chloride anhydrous
Sulphur chlorides
Sulphuryl chloride
Stabilised liquid sulphur trioxide
Bromine and Solutions
Hydrocyanic acid
Hydrogen cyanide anhydrous
Tetraethyl lead
Methyl chloroformate
Nickel carbonyl
Titanium tetrachloride
Diethyl sulphate
Dimethyl sulphate
Carbon disulphide
Di-ethyl-ether
Hydrogen peroxide Solutions of a strength greater than 6 per cent. (20 vols)
Cumene hydrogen peroxide.

Suitable in relation to packing or to containers means :—

(*a*) well constructed and in good condition ;

(*b*) of such a character and construction that any interior surface with which the contents may come in contact is not dangerously affected by the substance being conveyed ;

(*c*) capable of withstanding the ordinary risks of handling and transport by sea ;

(*d*) capable of withstanding any pressure likely to be generated therein.

Effective.—Effective in relation to absorbent material means material of a nature capable of minimising the hazard of the liquid conveyed, and so disposed as to prevent movement and to ensure that the inner container or containers remain completely surrounded under all ordinary conditions of transport, and, where reasonably possible, of sufficient quantity to be capable of absorbing the liquid completely in the event of breakage of the container.

Combustible Cargo.—When this phrase is used it does not include dunnage in actual use in the stowage of the cargo. Due regard should be paid to the combustible nature of certain protective packing such as straw, wood shavings, bituminised paper and felts used for the packing of cargo.

Drums.—For the purposes of these Recommendations the terms " drums, barrels, casks or kegs " are regarded as synonymous

Fibreboard.—For the purposes of these Recommendations the term " fibreboard " is deemed to include " plywood ".

Steel.—For the purposes of these Recommendations " steel " includes " iron."

" **Inflammable** " and " **Flammable** " are synonymous terms

LABELLING ON PACKAGES

10 Before any packages of dangerous goods for which a label is stipulated are taken on board ship they must be marked conspicuously on the outside according to the nature of the contents as shown in the following classifications :

(i) Substances giving off inflammable vapours	
(*a*) Flash point below 73° F.	Label A1
(*b*) Flash point 73°–150° F.	Label A2
(ii) Gases possessing a fire risk	Label A3
(iii) Fireworks (shop goods)	Label B
(iv) Poisonous substances	Label C
(v) Corrosive substances	Label D
(vi) Combustible substances	Label E
(vii) Oxidising substances	Label F
(viii) Substances which react with water	Label G
(ix) Substances which react with air	Label H
(x) Medicinal or laboratory chemicals in limited quantities	Label J

The labels must conform with those given in Appendix D, pages 228 and 229 and they must be secured to the packages by such means that under the normal conditions of transport they will not become detached during transit. Alternatively, a replica of the appropriate label may be stencilled on the package.

11. The label, if recommended, is indicated in the appropriate column against each substance.

12. Packages of explosives must be marked as laid down under Section 1 of Part II.

DECK STOWAGE

13. **Limitation of Quantity.**—The total amount of dangerous goods carried on deck may not occupy more than 50 per cent. of the total open deck area. Within this limitation there is no restriction on the quantity of any individual substance except where provided for in Part II.

ABBREVIATIONS

Gram	g.	(singular and plural)	
Kilogram	kg.	" " "	
Ounce	oz.	" " "	
Pound	lb.	" " "	
Hundredweight	cwt.	" " "	
Inch	in.	" " "	
Foot	ft.	" " "	
Gallon	gal.	" " "	
Pint	pt.	" " "	(unofficial)
Litre	L.	" " "	
Flash point	fl. pt.		
Specific gravity	sp. gr.		
Centigrade	C.		
Fahrenheit	F.		

(*e*) S.A.S. explosives of Group 12 must not be stowed in the same compartment as those in Group 13 except that containers with S.A.S. explosives of Group 12 may be in the same 'tween deck space as containers with S.A.S. explosives of Group 13, provided that each Group is at opposite ends of the space. S.A.S. explosives of Group 11 may be stowed with S.A.S. explosives of Group 12.

(*f*) Insulated spaces with steel decks may be used for the stowage of S.A.S. explosives in Groups 11 and 12 and for shell and loose bombs in Group 13.

(*g*) If S.A.S. explosives of Group 13 containing chargings indicated by the letter "G" and a numeral are required to be shipped, prior reference must be made to the Ministry of Transport and Civil Aviation for the conditions of transport. In the case of Visiting Forces explosives of this group where this marking may not be used, reference will always be made to the Ministry of Transport and Civil Aviation.

(*h*) Compartments in which Group 13 explosives are stowed must have all hatch covers, ventilators, pump suctions, scuppers, etc., effectively sealed off. Insulated spaces, together with their internal air ducts not necessary for cooling or ventilation, must also be sealed off.

(*i*) Small quantities of less than 35 tons of S.A.S. explosives may be stowed in a suitable 'tween deck space between the ends of the hatches and the transverse bulkheads. Suitable containers as described in paragraphs 39 to 50, Sub-section D, must be used, and they must be effectively sealed off from the compartment. Eight containers may be stowed in the same space.

(*j*) Deck stowage is preferable for S.A.S. explosives belonging to Groups 11, 12 and 13 under normal conditions. During an emergency it may be necessary to avoid this form of stowage where possible. The explosives must be conveyed in steel portable containers of Types A or B except in the case of lachrymatory stores which, as an alternative, may be conveyed in properly sheeted portable wooden magazines. The container or magazines will be spaced and arranged on deck so that each is readily accessible in case of an emergency. They must not be stowed more than one tier high and must not be overstowed.

(*k*) S.A.S. explosives, other than Artillery Shell, Q.F. and Mortar Ammunition, may not be overstowed.

Notes.—1. The method of marking packages containing S.A.S. explosives in Groups 11, 12 and 13 is given in Sub-section F.

2. Chemical Defence Preparations should be stowed in a similar manner to Group 13 explosives.

26. Optional Deck Stowage. (D)

For the purposes of these Rules, "Optional Deck Stowage" means stowage on the uppermost deck in a suitable position away from steam pipes, the explosives being protected from weather and spray by tarpaulin covers and from the sun by an awning.

Explosives for which this stowage is suitable are indicated by the letter (D) after the normal stowage code letters in Sub-sections B and C.

27. Deck Stowage Only. D.S.O.

Explosives requiring this type of stowage must be placed on deck in steel containers.

28. Petrol Stowage Special. P.X.S.

Explosives requiring this type of stowage are in Group 15 and need the stowage conditions applicable to petrol in drums.

29. Unclassified Stowage. U.C.S.

Explosives requiring this type of stowage will be dealt with in accordance with Special Instructions issued by Headquarters of the Ministry of Transport and Civil Aviation.

30. Explosives and Coal

Explosives must not be carried in a compartment containing coal, nor in a compartment directly beneath one containing coal whether there is an intervening compartment free of coal or not.

Explosives other than those marked "(C)" in column 3 of Sub-section B and column 4 of Sub-section C must not be carried in a 'tween deck compartment directly over a compartment containing coal whether there is an intervening compartment free from coal or not. In special circumstances, however, upon the authority of the Ministry of Transport and Civil Aviation Headquarters, to whom each case must be submitted, certain additional explosives may be stowed in 'tween deck compartments directly over compartments containing coal.

When such compartments are used for the carriage of explosives, the explosives must be raised off the decks of the compartments by the use of battens to facilitate fire-fighting operations.

The above restrictions do not apply to coke.

31. Slinging Rules for Government Explosives

(*a*) Explosives packed in boxes, except in the special instances mentioned in (*d*), (*f*), (*g*) and (*h*) should be slung in ammunition trays of approved design (e.g. see Plate III) or on scale boards fitted with efficient anti-spilling devices.

(*b*) Loose shell, up to and including 7·2 inch calibre, are to be slung in ammunition trays of approved design at a jetty or dock. At an anchorage they may be slung on scale boards fitted with efficient anti-spilling devices as an alternative to ammunition trays.

Loose shell, above 7·2 inch calibre, are to be slung in strop slings slightly nose heavy, care being taken with capped shell to see that the sling is clear of the cap and that the cap is not loosened.

(*c*) Loose aircraft bombs, up to 1,000 lb. inclusive, should be slung either with approved bomb slings (e.g. Plate IV) hooked into the lug on the *side* of the bomb, or alternatively, in ammunition trays of approved design or on scale boards fitted with efficient anti-spilling devices.

Loose aircraft bombs, above 1,000 lb. should be slung horizontally by two wire snotters in the form of a bridle.

(*d*) Clustered aircraft bombs, up to 1,000 lb., packed in steel cylinders, should be slung horizontally by means of :—

(i) Approved bomb slings shackled to the holes in the joining flange of the cylinders or to the lifting rings provided on later types, or

(ii) By two wire snotters in the form of a bridle sling, the sharp edges of cylinder flanges being suitably packed with wood chafing pieces.

Clustered aircraft bombs above 1,000 lb., packed in steel cylinders, should be slung horizontally by two wire snotters of adequate S.W.L. in the form of a bridle sling, and sharp edges of cylinder flanges should be packed with wood chafing pieces.

Clustered aircraft bombs packed in wooden roller cases, should be slung horizontally by means of two snotters forming a bridle.

Clustered aircraft bombs packed in rectangular wooden cases, should be slung horizontally by rope sling (strops), the soundness of which must be verified regularly during the course of loading and discharging. Care must be taken to maintain uppermost that side of the package which is indicated as the top by appropriate markings.

Clustered aircraft bombs of the nose ejection type are to be slung in the manner described for loose aircraft bombs of the corresponding weight.

Note.—In all cases landing mats should be used when clustered aircraft bombs are being handled.

(*e*) Submarine mines except ground mines without crates, are to be slung by the lifting eyes provided. Ground mines without crates are to be slung by suitable strops. Special care must be taken to prevent damage to the casing.

(*f*) Mine charge cases and depth charges except Mark 11 (eleven) are to be slung by their ringbolts, lifting lugs or lifting eyes of the crate holding them, as appropriate. Depth charges, Mark 11 (eleven), are to be slung on ammunition trays of approved pattern or scale-boards with an efficient anti-spilling device.

(*g*) Torpedo warheads should be slung by the special lifting lugs provided at the end of the package.

(*h*) Packages containing Naval B.L. cartridges are to be slung from their beckets using hook slings fitted with spring clips. Packages containing Naval Q.F. cartridges may also be slung from their beckets if this is more practicable than the use of ammunition trays, *vide* 31 (*a*). Care must be taken that all beckets are used, and that no one package takes the strain of another.

(*i*) The use of nets *alone* for slinging explosives is prohibited.

(*j*) Containers holding bulk explosive must not be rolled during the operations of loading or unloading.

32. Methods of Stowage

Explosives will be stowed in the following manner :—

(*a*) Loose shell and bombs :—

1. The bottom tier should rest on two broad runners, laid athwartships and sufficiently thick to keep the grummets or lugs clear of the deck. The runners should be at the points of greatest bearing, which, with shell, will be immediately in front of the driving band and at the shoulder.
2. The lower tier of shell should have the grummets hard against one another, the heads being spaced to keep the axes parallel and secured with chocks or dunnage sidepieces on each side. Aircraft bombs should be dealt with in a generally similar manner, care being taken to avoid damaging the lugs.
3. The chocks and dunnage pieces referred to in 2 can if necessary be dispensed with for the lower tiers of shell below 8 inch calibre, and also with shell of 8 inch calibre and above when there is only one tier, and the shell in this tier are stowed alternately heads and tails with the grummets taking snugly against the shoulders of adjacent shell.
4. Riding tiers of shell should be reversed, care being taken that the grummets of the riding tier are taking snugly against the shoulders of the two lower shell. Aircraft bombs should be stowed similarly.
5. When shell of 7·2 inch calibre and above are stowed in more than one tier, two broad runners are to be placed below each tier at the points of greatest bearing on the tiers above and below, to ensure that the driving bands are not in contact with the shoulders of shell above or below them. In this arrangement each shell must be chocked off securely in a similar manner to those in the lower tier.
6. Wings should be secured by wedges thoroughly driven down.
7. Holding down boards are to be used for single or broken tiers and when shell are not overstowed.
8. Adjacent piles of shell or bombs should be stowed so that they are nose to nose and base to base.
9. The number of tiers, or height of stack, must not exceed the following :—

(i) Shell, all natures :—

	Tiers
12 inch and over	5
Below 12 inch to 7·2 inch	8
Below 7·2 inch to 5·5 inch	11
Below 5·5 inch	15

(ii) Aircraft bombs :—

Bombs, aircraft, A.P.	20 ft.
Bombs, aircraft, H.E., low charge	
Bombs, aircraft, H.E. medium charge not exceeding 1,000 lb	
Bombs, aircraft, H.E. medium charge exceeding 1,000 lb.	10 ft.
Bombs, smoke	
Bombs, T.I.	
Clusters, H.E.	
Clusters, incendiary	
Bombs, aircraft, H.E. high charge	3 tiers
Bombs, chemical	2 tiers

These limiting heights of stacking are based on the assumption that the stacks are positively secured by proper stowing. Bombs, aircraft, H.E., high charge must have wooden runners of at least 4 inches bearing face between tiers.

The following types of bombs will not be overstowed (i.e. have other cargo stowed on top) :—

Bombs, chemical
Bombs, smoke
Bombs, T.I.
Clusters, H.E.
Clusters, incendiary

When the other types of bombs are stacked to a height less than the maximum given above for the type, they may be overstowed provided that the overall weight on the lowest layer of bombs is not greater than that which would result from stacking the bombs to the given maximum height.

(*b*) Depth charges and mine charge cases are to be stowed fore and aft in athwartships tiers on their sides to a height not exceeding six tiers, having broad runners under the bottom tier, the pile to be blocked off similarly to shell.

(*c*) Submarine mines must not be stowed more than three tiers high.

(*d*) Barrels must invariably be stowed bilge free and be well chocked off.

(*e*) Packages containing explosives are to be stowed with their longest axis horizontal, unless otherwise specified.

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Explosive sweeps ..	8	C	O.A.S.	
Flares, ground .	9	B	A.S.P.	See Note 5
Flares, identification ..	9	B	A.S.P.	See Note 5
Flares, illuminator .	9	B	A.S.P.	See Note 5
Flares, incendiary .	11	B	O.A.S. (D)	
Flares, reconnaissance .	9	B	A.S.P.	See Note 5
Flares, signal	9	B	A.S.P.	See Note 5
Flashes, photographic (large) .. .	5	C	O.A.S.	
Flashes, photographic (medium) ..	6	C	O.A.S.	
Floats, flare .. .	9	B	A.S.P.	See Note 5
Floats, lachrymatory ..	13	B	S.A.S.(D)(R)	See Notes 11 and 12
Floats, signal ..	6	B	O.A.S.	
Floats, smoke .. .	11	B	O.A.S. (D)	
Floats, smoke and flame	9	B	A.S.P.	See Note 5
Fulminate of mercury, dry, 1 oz. sample	10	B	M.S.D.	
Fulminate of mercury, wet	10	C	M.S.D.	
Fuse, detonating ..	4	C	O.A.S.	
Fuse, instantaneous ..	6	B	O.A.S.	
*Fuse, safety .. .	6	—	O.A.S.(C)	Safety Class
Fuze powders	1	C	M.S.A.	
Fuzes	6	B	O.A.S.	
Fuzes, mine, A.Tk. No. 3	10	C	U.C.S.	
Fuzes, with exploders ..	6	C	O.A.S.	
Gaines	6	B	O.A.S.	
Generators, chemical ..	13	B	S.A.S.(R)	See Notes 11 and 12
Generators, lachrymatory	13	B	S.A.S.(D)(R)	See Notes 11 and 12
Generators, smoke .	11	B	O.A.S. (D)	
Grenades, H.E.	8	B	O.A.S.	
Grenades, H.E./H.C. ..	8	C	O.A.S.	
Grenades, incendiary .	11	B	O.A.S. (D)	
Grenades, lachrymatory .	13	B	S.A.S.(D)(R)	See Notes 11 and 12
Grenades, signal	9	B	A.S.P.	See Note 5
Grenades, smoke ..	11	B	O.A.S. (D)	
Grenades, smoke, W.P. ..	12	B	S.A.S.(D)(R)	See Notes 8 and 10
Guncotton, dry	1	C	M.S.A.	
Guncotton, sets, demolition	4	C	M.S.B.	
Guncotton, wet	4	C	O.A.S.	
Guncotton, wet, loose ..	4	C	M.S.B.	
Gunpowder	1	C	M.S.A.	

* See Note 3

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Heads, rocket, flare ..	9	B	A.S.P.	See Note 5
Heads, rocket, radar echo	6	B	O.A.S.	
Heads, rocket, target .	9	B	A.S.P.	See Note 5
Heads, T-cutters .	6	B	O.A.S.	
Igniters, electric .	6	B	O.A.S.	
Igniters, flame thrower	9	B	A.S.P.	See Note 5
Igniters, fuse .	6	B	O.A.S.	
Igniters, gunpowder	1	C	M.S.A.	
Igniters, rocket ..	9	B	A.S.P.	See Note 5
*Igniters, safety ..	6	—	O.A.S. (C)	Safety Class
Igniters, shell	6	B	O.A.S.	
Igniters, smoke .	9	B	A.S.P.	See Note 5
Igniters, torpedo .	11	B	O.A.S. (D)	
Indicators, A/S, training	9	B	A.S.P.	See Note 5
Indicators, mine, firing	9	B	A.S.P.	See Note 5
Initiators, thermal	6	B	O.A.S.	
Kits, waterproofing ..	8	C	O.A.S.	
Lead azide, wet or dry, 1 oz. sample .	10	B	M.S.D.	
Lights, service .	9	B	A.S.P.	See Note 5
Markers, smoke .. .	11	B	O.A.S.(D)	
Mines, alarm	9	B	A.S.P.	See Note 5
Mines, anti-personnel ..	8	C	O.A.S.	
Mines, cases, charge	7	C	O.A.S.	
Mines, chemical	13	B	S.A.S. (R)	See Notes 11 and 12
Mines, contact .	7	C	O.A.S.	
Mines, land	8	B	O.A.S.	
Mines, underwater ..	7	C	O.A.S.	
Minol	4	C	M.S.B.	
Mortar ammunition, chemical ..	13	B	S.A.S.(R)	See Notes 11 and 12
Mortar ammunition, H.E. (light) . .	8	B	O.A.S.	
Mortar ammunition, H.E. (medium)	8	C	O.A.S.	
Mortar ammunition, practice	8	B	O.A.S.	
Mortar ammunition, radar echo	8	B	O.A.S.	
Mortar ammunition, signal	9	B	A.S.P.	See Note 5
Mortar ammunition, smoke	11	B	O.A.S.(D)	

* See Note 3

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Mortar ammunition, smoke, F.M. or C.S.A.M	11	B	S.A.S.(D)(R)	See Note 6
Mortar ammunition, smoke, W P.	12	B	S.A.S (D)(R)	See Note 8
Motors, rocket (boxed)	6	B	O.A.S	
**Motors, rocket, H C., (boxed)	6	B	O.A.S.	
**Motors, rocket, H C., (loose)	8	B	O A.S.	
**Nitrated paper	3	B	M.S.B.	
**Nitro-cellulose cannon powder	3	B	M.S.B.	
Nitro-cellulose small arms granular powder	1	C	M S.A.	
Nitro-cellulose small arms granular powder in metallic containers	2	C	M S B.	See Note 9
Nobel's 808	2	C	M S B.	
Nobel's 809	2	C	M S B	
Nobel's 896	4	C	M S B	
Pentolite	4	C	M S B.	
Petards	8	C	O A.S	
P.E.T.N., dry, 1 oz. sample	10	B	M S.O.	
P.E.T.N., wet	4	C	M S B	See Note 2
P.E.T.N /Wax	4	C	M S B	
Picric acid	4	C	M S L.	See Note 1
Picric powder	1	C	M S L.	
Picrite	4	C	M S.B.	
Plastic explosive	4	C	M.S.B.	
**Plastic propellant, type 1	3	B	M S.L.	
Plastic propellant, type 2	2	C	M S.L.	
Portfires	9	B	A S.P.	See Note 5
Potassium di-nitro-phenate	4	C	M S.L.	See Note 1
Primers, C.E.	1	C	M.S.A.	
Primer detonators	6	B	O A.S	
Primers, electric	6	B	O A S.	
Primers, electric & percussion	6	B	O.A.S.	
Primers, metal, H.B	8	C	O.A.S.	
Primers, percussion	6	B	O A.S.	
Projector ammunition, H.E.	8	C	O A.S.	
Projector ammunition, practice	8	B	O.A.S.	

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Projectiles, A/S , fuzed	7A	C	O.A.S.	
Projectiles, A/S., plugged	7	C	O A S.	
Projectiles, H.E., hedgehog	8	C	O.A.S.	
Projectiles, H.E., hedgerow	8	C	O.A.S.	
Projectiles, hedgehog, weighted	6	B	O.A.S.	
Projectiles, practice, hedgerow	6	B	O.A.S.	
Propellant compositions	2	C	M S B.	
Puffs, cordite	1	C	M.S.A.	
Puffs, cordite in metallic containers	2	C	M.S B.	See Note 9
Puffs, gunpowder	1	C	M.S.A.	
Puffs, powder, with igniter	6	C	O.A S	
Puffs, smoke	11	B	O A S (D)	
Quickmatch	1	B	O.A.S.	
R.D.X., dry 1 oz. sample	10	B	M S D	
R.D.X., wet	4	C	M S B	See Note 2
R D X /T N.T.	4	C	M S B	
R D.X./Wax	4	C	M S.B.	
Relays, electric	6	B	O.A.S.	
Rockets, H.E.	8	C	O A.S.	See Note 4
Rockets, illuminating	9	B	A S P	See Note 5
Rockets, line	9	B	A.S P.	See Note 5
Rockets, practice	9	B	A.S P.	See Note 5
Rockets, signal	9	B	A.S.P.	See Note 5
Rockets, training	8	B	O.A.S.	See Note 4
Sets, fuzing	6	B	O.A.S.	
Sets, initiating charges	8	B	O.A.S	
Shell, chemical	13	B	S.A.S.(R)	See Notes 11 and 12
Shell, flare (boxed)	6	B	O A.S.	
Shell, flare (loose)	5	B	O A.S.	
Shell, H.E. (boxed)	6	B	O.A.S	
Shell, H.E. (loose)	5	C	O A.S (D)	
Shell, H.E , A/C., rocket	8	C	O.A.S.	
Shell, H E , armour piercing (loose)	5	B	O.A S (D)	
Shell, H.E., high charge	6	C	O.A.S.	
Shell, H.E , piercing (loose)	5	C	O.A.S.(D)	
Shell, H.E , rocket	8	C	O.A.S.	
Shell, H.E., S.A.P. (loose)	5	C	O.A.S (D)	
Shell, incendiary	11	B	O.A.S (D)	

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Shell, practice (loose)	5	B	O.A S.(D)	
Shell, practice (boxed)	6	B	O A.S.	
Shell, radar echo (loose)	5	B	O.A.S (D)	
Shell, radar echo (boxed)	6	B	O A.S.	
Shell, shrapnel (loose)	5	B	O.A S (D)	
Shell, shrapnel (boxed)	6	B	O.A S.	
Shell, smoke	11	B	O.A.S.(D)	
Shell, smoke, F.M. or C.S.A.M.	11	B	S.A S.(D)(R)	See Note 6
Shell, smoke, W.P.	12	B	S.A S (D)(R)	See Note 8
Shell, star (loose)	5	B	O.A.S (D)	
Shell, star (boxed)	6	B	O.A S.	
Shot, tracer	5	B	O.A S (D)	
Shot, with tracer (boxed)	6	B	O.A.S.	
Signals	9	B	A S.P.	See Note 5
Signals, drift, night	11	B	O.A.S (D)	
*Signals, fog	6	—	O.A.S (C)	Safety Class
Simulators, gunflash	9	B	A.S.P.	See Note 5
Simulators, R.F. or M.G	10	C	M S.D.	
Sleeves, fuze	10	C	M.S.D.	
Styphnic acid, dry, 1 oz. sample	10	B	M S.D.	
Styphnic acid, wet	4	C	M S L.	See Note 2
Switches	6	B	O.A S.	
Switches, H.E.	8	C	O.A S.	
Thunderflashes	9	B	A.S P.	See Note 5
T.N.T.	4	C	M S B.	
Torpex	4	C	M.S.B.	
Tracers	9	B	A S.P.	See Note 5
Tritonal	4	C	M.S B.	
Tubes, electric	6	B	O.A.S.	
Tubes, friction	6	B	O.A.S.	
Tubes, percussion	6	B	O A.S.	
Warheads	7	C	O.A.S.	

* See Note 3

NOTES RELATING TO THE LIST OF GOVERNMENT EXPLOSIVES COMPRISING SUB-SECTION B

Note 1

Picric acid, potassium di-nitro-phenate and di-nitro-resorcinol containing 33½ per cent. of water, calculated on the wet material, are non-explosive.

Di-nitro-phenol containing 15 per cent. of water calculated on the wet material is non-explosive.

Di-nitro-resorcinol, di-nitro-phenol, picric acid and potassium di-nitro-phenate may only be consigned as non-explosive when wetted as indicated and provided the di-nitro-resorcinol, di-nitro-phenol or potassium di-nitro-phenate is packed in a watertight package.

Note 2

P.E.T.N. or R.D.X. must be wetted with 25 per cent. of water and styphnic acid with 20 per cent. of water, calculated on the wet material, for carriage by sea. This is a safety precaution only, and does not render the material non-explosive. Watertight packages must be used.

Note 3

Explosives included in the Safety Class bear the Group 6 Government Explosives Label including the words " Safety Class " (older labels may include the words " Safety Cartridges " instead). They may be conveyed by passenger ship in any reasonable quantity either in peace or war, in their normal service packages.

Note 4

Fully assembled rockets H.E., or rockets, training, must be stowed with the head towards a bulkhead. Packages are marked to indicate the head.

Note 5

Group 9 explosives must not be overstowed.

Note 6

Packages containing ammunition charged with F.M. or C.S.A.M. must bear the label or stencil, " S.A.S." when forwarded for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 7

Bombs, smoke, and clusters, incendiary, in Group 11 must not be overstowed.

Note 8

Packages containing explosives belonging to Group 12 requiring S.A.S. stowage must be labelled or stencilled " S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 9

The metallic containers must be airtight, a luting seal is not sufficient.

Note 10

Grenades, smoke, WP, when not packed in scored tinplate cylinders must be certified as having passed 100 per cent. examination within one month before shipment.

When certified as packed in scored tinplate cylinders and to have been produced within one year of the date of shipment, the 100 per cent. examination of the grenades is not required.

When the period which has elapsed since production of grenades packed in these cylinders exceeds a year it must be certified that the scored cylinders have passed 100 per cent. external visual inspection for freedom from corrosion or damage, within three months before shipment.

Note 11

All types of chemical ammunition (other than shell, mortar ammunition, steel chemical bottles—when packed in activated charcoal—and lachrymatory stores) must have a conducting party.

Note 12

Packages containing explosives belonging to Group 13 must be labelled or stencilled "S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 13

O.A.S. conditions for cordtex are conditional upon the exposed ends of the explosives being effectively sealed and the use of a stout wooden package for the explosive. If these conditions are not fulfilled the stowage conditions will be M.S.A. Cordtex must not be overstowed.

Note 14

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours

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AMMUNITION OF THE NON-EXPLOSIVE CATEGORIES OF DANGEROUS GOODS

There are some types of ammunition used in the Services which are categorised in the non-explosive categories of "Dangerous Goods" as given in Statutory Instrument No. 1977/1952 under the title "The Merchant Shipping (Dangerous Goods) Rules, 1952". The designations of these types together with the nature of the danger to which they give rise, as indicated by the categories to which they belong, are given in the following table.

Designation of Ammunition (1)	Dangerous Substance (2)	Category in accordance with S.I. No. 1977 of 1952 (3)	Section of Report applicable (4)
Ampoules, acetone	Acetone	(v)	5
Ampoules for mine, practice, contact, A.Tk.	Chlorsulphonic acid mixture	(iii)	3
Bomb, aircraft, practice, flame, break-up 8½ lb	Phosphide	(vi)	6
Bomb, aircraft, practice, smoke, break-up 8½ lb.	Titanium tetrachloride	(iii)	3
Bomb, aircraft, practice, smoke, filled F.M. or C.S.A.M.	Titanium tetrachloride or chlorsulphonic acid mixture	(iii)	3
Bomb, incendiary, AN-M, lb., filled T.P.1 (See Group 15 for these bombs fitted with exploders)	Petrol	(v)	5
Candles, smoke, white	Phosphide	(vi)	6
Container, smoke	Titanium tetrachloride	(iii)	3
Destructor, incendiary No. 2 (See Group 11 for other numbers)	Petrol	(v)	5
Drums, F.M.	Titanium tetrachloride	(iii)	3
Drums, aniline-furfuryl alcohol mixture	Aniline and furfuryl alcohol	(iv)	4 stowage away from acids
Drums, inhibited red fuming nitric acid	Fuming nitric acid	(iii)	3
Flame floats, aircraft, navigation	Phosphide	(vi)	6
Installation, S.C., type G, lb., filled F.M.	Titanium tetrachloride	(iii)	3
Light, indicating lifebuoy	Phosphide	(vi)	6
Light, indicating torpedo	Phosphide	(vi)	6
Marker, marine, aircraft	Phosphide	(vi)	6
Marker, sea, aluminium	Aluminium powder	(vi)	6
Matches, flamer	Match composition	(x)	7b
Matches, fuzee, safety	Match composition	(x)	7b
Matches, waterproof safety	Match composition	(x)	7b
Mine charge cases, filled sodium phosphide	Phosphide	(vi)	6
Pistols, aircraft bomb with acetone ampoules	Acetone	(v)	5
Slow match	Potassium nitrate	(x)	7a
Submarine bubble decoy	Magnesium and iron powder	(vi)	6

These types of ammunition must not be labelled or marked to suggest they contain explosives and must not be consigned for transport as explosives. The package (or weapon, if loose) must be stencilled or labelled to indicate the designation of the ammunition, the substance contained which brings it under the "Dangerous Goods" Rules and the nature of the risk corresponding to its category as given in the Rules, e.g. Installation, S.C., Type G, 250 lb.—Titanium Tetrachloride—Corrosive. In the case of ammunition belonging to Category (v) it is also necessary to add stencilling or a label bearing the words "Highly Inflammable—Flash Point Below 73°" or "Inflammable—Flash Point 73°–150°", as applicable. The stowage of these types of ammunition in relation to explosives will be governed by the conditions laid down for the dangerous substance which they contain.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
HYDROGEN FLUORIDE (Hydrofluoric Acid Anhydrous).	Non-inflammable. Fumes in air. Poisonous. Injurious to the skin. Very corrosive to metals and glass in the presence of moisture. Heavier than air. Liquid at temperatures below 68° F. (20° C.).	(1) Cylinders.	B.S. 401	0·85	19	0·80	44	(1) On deck only adequately secured and well clear of living accommodation. Away from corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion. Not to be overstowed. Not to be carried over holds containing coal.	(1) Not allowed.	None.	C and D.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation		0·85				(2) As for cylinders. Not more than 12 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56).	(2) do.	None.	C and D.
HYDROGEN SULPHIDE (Sulphuretted Hydrogen)	Poisonous even in small quantities (much less than 1%). Inflammable. Foul odour. Explosive with about 4% to 46% in air. Slightly heavier than air.	Cylinders	B.S. 401	0·68	448	0·63	695	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not allowed in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	do.	3	A3 and C.
METHYLAMINE (Monomethylamine)	Inflammable. Pungent ammonia-like odour. Suffocating. Slightly heavier than air.	do.	B.S. 401	0·57	84	0·54	156	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	do	3	A3.
METHYL BROMIDE (Bromomethane).	Non-inflammable. Very faint chloroform-like odour. Is a volatile, colourless liquid at normal temperatures. Poisonous even at low concentrations. Heavier than air.	(1) do.	B.S. 401	1·45	49	1·39	101	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, food and foodstuffs	(1) do.	7	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·45		1·39		(2) As for cylinders. Not more than 12 tons of gas in these containers may be carried in any ship (see paragraph 10, page 56).	(2) do	do	C.
		Note.—When packed in tins or glass containers in wooden cases, see Section 4a									

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C (113° F.)) Filling Ratio	Temperate Climates Working (Gauge) Pressure (lb per square inch)	Tropical Climates (Maximum Temperature 65° C. (149° F)) Filling Ratio	Tropical Climates Working (Gauge) Pressure (lb per square inch)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions as stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
METHYL BROMIDE (Bromomethane.) (*contd.*)		(3) Made up fire extinguishers. If containers are of suitable strength, in good condition and free from rust, may be packed with suitable absorbent material in wooden cases						(3) On or under deck. Away from living quarters (see definition(A), page 5), food and foodstuffs.	(3) Not allowed.	None.	C when cased.
METHYL CHLORIDE (Chloromethane).	Inflammable. Faint sweet odour like ether. Explosive with about 8% to 19% in air. Anæsthetic. Evolves hydrochloric acid when burned. Heavier than air.	(1) *Cylinders*	B.S. 401	0·83	125	0·78	207	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) As for cargo ships.	3	A3.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		0·83		0·78		(2) As for cylinders. Not more than 12 tons of gas in these containers may be carried in any ship (see paragraph 10, page 56)	(2) Not allowed.	3	A3.
NITROGEN TETROXIDE (Nitrogen Peroxide)	Non-inflammable. Gas is reddish brown in colour. Powerful oxidising agent. Poisonous. Corrodes metals when moist due to formation of nitric acid. Heavier than air.	Cylinders specially approved by the Ministry of Transport and Civil Aviation.		1·25	26	1·20	73	On deck only, adequately secured and well clear of living accommodation. Away from corrosive or inflammable liquids and readily combustible solids. Not to be carried over holds containing coal.	do	None.	C.
NITROSYL CHLORIDE	Non-inflammable. Involved in a fire will form chlorine and one of the oxides of nitrogen as products of decomposition. Corrosive to iron and steel.	Cylinders specially approved by the Ministry of Transport and Civil Aviation.		1·10	74	1·04	133	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids readily combustible solids and strong supporters of combustion.	do	6	D.
NITROUS OXIDE	Non-inflammable. Colourless and sweet tasting. Anæsthetic. Will support combustion. Heavier than air.	Cylinders.	B.S. 401 B.S. 1287 B.S. 1288	0·75 * If more than 0·1% impurities present, filling ratio should be 0·625.	2025	0·667*	2450	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids and readily combustible solids.	As for cargo ships.	None.	—
NITROUS OXIDE IN SUITABLE METAL BULBS	Non-inflammable. Colourless and sweet tasting. Anæsthetic. Will support combustion. Heavier than air.	Small capsules containing up to one-third of an ounce each, packed in cardboard cartons in strong wooden cases.		0·75		0·75		May be carried without restriction.	May be carried without restriction.	do	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ARSENIC COMPOUNDS other than those mentioned above, including the following:— Arsenates, Arsenites, Sulphides and Organic Compounds of Arsenic.	Solids, fine powders, or liquids, all of which are poisonous if taken internally. Care should be taken not to breathe the air laden with fine powder	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid.	2½ gal if liquid.	(1) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal. in each case	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	C
		(2) do.	5% if liquid.	15 gal if liquid.	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with protective material	—	(2) do.	(2) do.	do	C.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do	do.	C.
		(4) Suitable vulcanised rubber lined cartons effectively closed with a double cap	—	—	(4) do.	—	(4) do	(4) do.	do.	C.
		(5) Tins or cans of suitable make, effectively closed	5% if liquid.	—	(5) Packed with effective absorbent material in wooden cases. If liquid, not more than 10 gal. in each case	—	(5) do.	(5) do.	do	C.
		(6) Suitable metal drums (e.g. steel), effectively closed	5% if liquid.	100 gal if liquid.	(6) —	—	(6) do	(6) do.	do	C.
		For solids:— (7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(7) —	—	(7) do.	(7) do.	do.	C.
		(8) Double-walled paper bags, securely closed.	—	—	(8) Packed tightly in outer cases	—	(8) do. *Note*, Sodium Arsenite should not be stowed in the same compartment as food and foodstuffs	(8) do.	do.	C.
BARIUM, BARIUM METAL	See *Section* 6 (Interaction with Water)									

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BARIUM COMPOUNDS other than those mentioned elsewhere in the Schedules, and excluding BARIUM SULPHATE, which is not a poison and is not dangerous.	Solid, powder, lumps or crystals. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships	None.	C.
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or (*b*) stout slotted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do.	C.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do	(3) do	do	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(4) do.	—	(4) do.	(4) do.	do.	C.
		(5) Tins or cans of suitable make, effectively closed.	—	—	(5) Packed with suitable protective material in wooden cases	—	(5) do.	(5) do.	do.	C.
		(6) Suitable metal drums (e.g. steel), effectively closed	—	—	(6) —	—	(6) do	(6) do	do	C.
		(7) Suitable wooden barrels, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do	(7) do	do.	C.
		(8) Double-walled paper bags, securely closed	—	—	(8) Tightly packed in outer cases.	—	(8) do	(8) do	do	C.
		(9) Sound hessian bags, paper lined, securely closed	—	—	(9) —	—	(9) do.	(9) do.	do.	C.
		(10) 5 ply paper bags, the inner ply being coated with polythene, securely closed	—	—	(10) —	—	(10) do	(10) do	do	C.
CHLORODINITROBENZENE (Dinitrochlorobenzene)	Crystalline solid. Dermatitis may be produced by handling the powder and the fumes and fine dust have a markedly irritant action on the skin. Insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do.	—
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; or	—	(2) do	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
ALUMINIUM METAL OR ALLOY (Borings, chips, granules, shavings, unpolished powder) Bars, ingots or sheets are not considered dangerous.	Evolve hydrogen in contact with water. Will react readily with caustic alkalis and mineral acids evolving hydrogen. Finely divided dust, if liberated from broken packages containing powdered aluminium or alloys, is easily ignited by naked lights	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, caustic alkalis and strong supporters of combustion.	(1) As for cargo ships.	5	G
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do	do.	G
		(3) Suitable paper bags	—	1 lb	(3) Packed in hermetically sealed tin-lined wooden cases	—	(3) do.	(3) do.	do.	G.
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do	G.
Note.—Borings, chips, granules and shavings may be packed in less stringent packings provided a sample has been tested by the Ministry of Transport and Civil Aviation.										
ALUMINIUM POWDERS, POLISHED (treated with oil or wax) for printing and paint purposes.	These powders do not evolve hydrogen when in contact with water at ordinary temperature and are not dangerous in themselves.	—	—	—	—	—	Keep dry. Away from caustic alkalis and acids.	do.	None.	—
ALUMINIUM SILICON in powder form. (Aluminium Silicon in ingot form is not considered dangerous)	In contact with water evolves hydrogen.	As for Aluminium Powder (unpolished)			—	—	—	Not allowed.	5	G.
BARIUM ALLOYS, non-pyrophoric. (For pyrophoric alloys see Section 8)	When containing a substantial proportion of barium rapidly decompose water evolving hydrogen which may ignite. React violently with acids	(1) Glass or earthenware containers of suitable make, effectively closed	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do	5	G
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do.	do.	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	5 cwt.	(3) do	(3) do.	do.	G.
BARIUM METAL	Metal which tarnishes in air. Rapidly decomposes water evolving hydrogen which may ignite. Reacts violently with acids	(1) Glass or earthenware containers of suitable make, effectively closed	—	1½ lb Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do.	5	G.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BARIUM METAL (*contd.*)		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1).	(2) Not allowed.	5	G.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	5 cwt.	(3) do	(3) do.	do	G
BARIUM OXIDE	Solid. Evolves heat in contact with water Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry On or under deck. Away from acids, ammonium compounds, food and foodstuffs.	(1) Under deck.	3	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do.	3	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	—	—	(3) do.	(3) do	3	G.
		(4) Suitable wooden barrels, effectively closed	—	—	—	—	(4) do.	(4) do	3	G
CALCIUM METAL and ALLOYS (non-pyrophoric) (For pyrophoric alloys see Section 8)	Rapidly decompose water evolving hydrogen which is liable to ignite. React violently with acids	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1½ lb.	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb net per case	—	(1) Keep dry On or under deck. Away from acids, strong supporters of combustion and living quarters (see definition (B), page 5)	(1) Not allowed.	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1).	(2) do	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	5 cwt.	(3) do	(3) do	do	G.
CALCIUM CARBIDE (Carbide of Calcium).	Solid. In contact with water or aqueous solutions rapidly evolves acetylene, a highly inflammable gas Reacts vigorously with acids	(1) Glass or earthenware containers of suitable make, effectively closed	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry On or under deck. Away from acids, strong supporters of combustion, copper and copper alloys, and living quarters (see definition (B) page 5)	(1) do	4	G.
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do	do.	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	250 lb.	(3) —	—	(3) do	(3) do	do	G

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater.	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FIBRES (COIR, FLAX, HEMP, JUTE, KAPOK, SISAL and other vegetable fibres).	Readily combustible. In some cases fires have been attributed to sparks, cigarette ends, etc., alighting on an exposed surface. These fibres are considered not in themselves liable to spontaneous combustion. They are, however, liable to spontaneous combustion if they become impregnated with oil.	Must be dry and securely baled.	—	—	—	—	On or under deck. Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils, including turpentine or rosin oils, should be stowed in a compartment above such oils, but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and batches securely closed against leakage.	As for cargo ships	3	—
FIBRES OR FABRICS WITH ANIMAL OR VEGETABLE OIL (excluding Woollen Shoddy, for which see page 211).	Fibres or fabrics impregnated with more than 10% of animal or vegetable oil, including oiled or treated paper or textiles not manufactured into completed articles (for manufactured articles see Oiled Cloth)	(1) Metal-lined boxes of suitable make, hermetically sealed (2) Metal containers of suitable make, hermetically sealed.	— —	— —	(1) — (2) —	— —	(1) On or under deck. (2) do	(1) As for cargo ships. (2) do.	3 do.	H. H.
FISH SCRAP OR FISHMEAL.	Liable to spontaneous heating and ignition. Offensive odour will contaminate food.									
(a) Containing at least 6% and not more than 12% of moisture.		(1) Jute (Burlap) bags.	—	—	(1) —	—	(1) On or under deck. Away from food and foodstuffs. Through and surface ventilation to be provided.	(1) Not allowed.	3	—
		(2) Double-walled paper bags.	—	—	(2) —	—	(2) do.	(2) do.	do.	—
(b) Containing less than 6% or more than 12% of moisture.		(1) Metal-lined boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck.	(1) As for cargo ships.	do.	H.
		(2) Airtight metal containers.	—	—	(2) —	—	(2) —	(2) do.	do.	H.
(c) Wet acidulated (moisture content more than 40%).		NO RESTRICTIONS other than column 10							4	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HAY, STRAW OR BHUSA.	Readily ignited by external sparks and must be shipped dry as liable to spontaneous ignition if wet or damp. Shipment loose, wet or damp is not permitted.	Pressed into bales and well bound.	—	—	—	—	On or under deck.	As for cargo ships	3	—
IRON OR STEEL SWARF, e.g. Turnings, Drillings, Filings.	Liable to spontaneous combustion if in bulk and contaminated with oily matter.	Suitable metal drums, effectively closed.	—	—	—	—	do	do.	—	—
	Note :—Ministry of Transport and Civil Aviation approval must be sought for all bulk shipments of these materials.									
IRON OXIDE SPENT (Iron Sponge)	Liable to spontaneous heating and ignition if stowed in piles unless weathered and cooled for 3 weeks for Home Trade voyages and 8 weeks for Foreign voyages, and a declaration must be obtained to this effect. Contains sulphides.	—	—	—	—	—	If properly weathered may be carried in bulk in a hold not under living quarters.	Not allowed.	3	—
		IRON OXIDE SPENT IS PROHIBITED IF NOT WEATHERED AND COOLED.								
LAMP BLACK (Vegetable Black.)	There is a slight risk of spontaneous combustion or a dust explosion. (Not to be confused with Carbon Black which presents a negligible risk)	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from oxidising agents.	(1) As for cargo ships	4	H.
		(2) Suitable polythene bags, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(2) do.	(2) do.	do	H.
Note :—Lamp Black of mineral origin is not dangerous in itself.		(3) Suitable wooden barrels lined or coated internally with paper or other suitable material, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	H.
		(4) Sift proof paper bags with outside crepe paper bags	—	—	(4) Packed in wooden cases.	—	(4) do	(4) do.	do	H.
		(5) Paper-lined sift-proof wooden boxes	—	—	(5) —	—	(5) do	(5) do.	do	H.
		Note :—For packings (3), (4) and (5) printed paper must not be used.								
		(6) Suitable metal drums (e.g. steel), effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do	H.
		(7) Bales, consisting of inner kraft paper attached to hessian outer liner with bitumen and then wrapped in crepe paper. Iron bound and sealed so that no leakage can occur.	—	—	(7) —	—	(7) do	(7) do.	do	H.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

							Stowage			
Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Di-nitro-phenol wet with not less than 15% of water calculated on the wet weight. (*contd.*)		(2) Suitable barrels or cases of wood, effectively closed Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	(2) —	—	(2) On or under deck. Away from acids and inflammable substances and stowed so as not to come in contact with lead or heavy metals or salts of these metals, soda and any compound of sodium, or any chlorate, nitrate or other oxidising agent.	(2) Not allowed.	3	C.
Di-nitro-phenolates (Di Nitro-Phenates) wet with not less than 33⅓% of water calculated on the wet weight		AS FOR DI-NITRO-PHENOL								
Di-nitro-resorcinol wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) do.	3	—
		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	(2) —	—	(2) do	(2) do.	3	—
Ferrocerium (e.g. lighter flints).	Dangerous from its power of sparking in air when struck.	(1) Tins or cans of suitable make, effectively closed	—	2 cwt.	(1) Packed in wooden cases	—	(1) On or under deck. Not in the same hold or compartment as inflammable substances or strong supporters of combustion	(1) As for cargo ships.	4	—
		(2) Suitable metal drums (e.g. steel), effectively closed	—	—	(2) —	—	(2) do	(2) do	do	—
		(3) Suitable barrels or cases of wood, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do	—
Hessian (Burlap) Bags, New.		NO RESTRICTIONS								

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HESSIAN (Burlap) BAGS, Used	May be hazardous through contamination from previous contents, e.g. very inflammable if impregnated with sodium nitrate. Possibility of spontaneous combustion if impregnated by oil seeds.	Bales, compressed reasonably tightly and bound with wire, metal hoops, rope, rattan or withes.	—	—	—	—	On or under deck. Away from inflammable substances. Particular care necessary according to commodity previously contained in bag.	Not allowed, unless continuously used for inert material.	5	H.
LIGHTERS AND REFILLS CONTAINING BUTANE OR ISOBUTANE.	Butane and Isobutane are inflammable gases forming an explosive mixture with air. Heavier than air.	(1) Lighters and refill cylinders of suitable make and material.	—	35 g.	(1) Packed with suitable protective material in strong fibre-board containers. Not more than 1½ kg. (3½ lb.) of butane or isobutane in each container	—	(1) On or under deck. Away from all sources of heat, acids and alkalis.	(1) As for cargo ships.	4	A.3
		(2) do.	—	35 g.	(2) Packed with suitable protective material in strong wooden or metal cases. Not more than 6¾ kg. (15 lb.) of butane or isobutane in each case.	—	(2) do.	(2) do.	do.	A.3
NITROCELLULOSE wet with not less than 25% of water calculated on the wet weight. Must not contain more than 12.3% nitrogen.	Becomes explosive when dry.	Any suitable airtight container.	—	—	—	—	On or under deck. Containers should be inspected and any leakers rejected.	Not allowed.	3	—
PICRIC ACID wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry.	(1) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected.	—	—	—	—	(1) On or under deck. Away from inflammable substances and stowed so as not to come in contact with lead or other heavy metals or salts of these metals, soda or any compound of sodium or any chlorate, nitrate or other oxidising agent.	(1) do.	3	—
		(2) Suitable polythene bags, effectively sealed.	—	40 g	(2) Packed in suitable water tight steel drums not thinner than 18 B.G. (0·0495"), coated internally with a suitable acid resisting lacquer.	—	(2) do.	(2) do.	3	—
POTASSIUM SULPHIDE, fully hydrated and fused.	In contact with acid evolves hydrogen sulphide gas.	Any suitable container of sufficient strength to prevent any escape of the contents.	—	—	—	—	Under deck. Away from acids.	As for cargo ships.	4	—

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section* 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Label required
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
URANIUM AND THORIUM ORES AND ORE CONCENTRATES	Emit electro-magnetic rays	(1) All uranium ores and concentrates, and all thorium concentrates containing 10% and above by weight thorium oxide (ThO_2) to be in suitable metal drums (e.g. iron or steel), effectively closed.	—	(1) 10 cwt.			(1) On or under deck. Not in the same hold as food and foodstuffs, camera film or plate. The stow must be as nearly cubic in shape as possible, and no part of it may be closer than 10 feet in a vertical or horizontal plane to living accommodation or any working space. The segregation should also include a steel bulkhead of at least ½-in. thickness. The compartment to be thoroughly ventilated during loading and before unloading.	(1) As for cargo ships	4	—
		(2) All thorium ores less than 10% by weight thorium oxide (ThO_2) to be contained either in suitable metal drums (e.g. iron or steel) effectively closed, or in rot-proofed lined fibre sacks	—	(2) 10 cwt. for drums, 1 cwt. for sacks.	—	—	(2) do.	(2) do.	4	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Number of units (*See* "Labelling" on previous page)	Minimum distance in feet from living accommodation or permanent working space				Minimum distance in feet from undeveloped film or plate																							
					4-day voyage				9-day voyage				16-day voyage				25-day voyage				36-day voyage				49-day voyage			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Up to 1	10	10	10	15	15	10	10	15	20	15	10	15	30	20	10	15	35	25	10	15	40	25	10	15	50	30	10	15
2 to 5	25	10	10	15	35	15	10	15	50	15	10	15	75	25	10	15	95	30	10	15	120	35	10	15	140	40	10	15
6 to 10 ..	35	15	10	15	50	15	10	15	80	25	10	15	110	35	10	15	140	40	10	15	170	50	10	15	200	55	10	15
11 to 25 ..	60	20	10	15	85	25	10	15	135	40	10	15	180	50	10	15	225	65	10	15	260	75	15	15	300	90	15	15
26 to 50 ..	90	30	10	15	125	40	10	15	190	55	10	15	250	75	10	15	305	90	15	15	355	110	15	15	400	130	20	15
51 to 100 ..	135	40	10	15	180	50	10	15	265	80	15	15	340	105	15	15	405	130	20	15	465	160	25	15	520	185	25	15
101 to 200 ..	195	55	10	15	250	75	10	15	360	110	15	15	445	150	20	15	525	190	25	15	590	225	30	15	*	260	35	15
201 to 300 ..	235	70	10	15	300	90	15	15	420	135	20	15	520	185	25	15	600	230	35	15	*	270	40	15	*	310	45	15
301 to 400† ..	265	80	15	15	340	105	15	15	465	160	25	15	570	210	30	15	*	260	40	15	*	305	45	15	*	350	50	15

Column A: No intervening cargo or bulkheads screening the radioactive material from the living accommodation or undeveloped film or plate.

Column B: The radioactive material to be surrounded by at least two feet of cargo of unit density and at least one steel bulkhead between the radioactive material and the living accommodation or undeveloped film or plate.

Column C: The radioactive material to be surrounded by at least six feet of cargo of unit density and at least two steel bulkheads between the radioactive material and the living accommodation or undeveloped film or plate.

Column D: The radioactive material to be surrounded by at least fourteen feet of cargo of unit density and at least two steel bulkheads between the radioactive material and the living accommodation or undeveloped film or plate.

"Cargo of unit density" means cargo stowed at a density of 1 ton per 36 cu ft. Where the density is less than this, the depth of cargo specified in the notes on Columns B, C and D, i.e., two feet, six feet and fourteen feet, must be increased in proportion.

"Minimum distance" means the least in any direction, whether vertical or horizontal.

* Not to be carried unless screening by other cargo and bulkheads can be arranged in accordance with columns B, C and D.

† The total consignment on board at any time must not exceed 400 units without prior reference to the Ministry of Transport and Civil Aviation.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater. (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53). (10)	
SILVER PICRATE wet with not less than 33⅓% of water calculated on the wet weight.	Becomes explosive when dry.	(1) Glass or earthenware containers of suitable make, effectively closed. Stoppers must not be made of glass.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from inflammable substances and stowed so as not to come in contact with lead or other heavy metals or salts of these metals, soda or any compound of sodium, or any chlorate, nitrate or other oxidising agent.	(1) As for cargo ships.	3	—
		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected	—	—	(2) —	—	(2) do.	(2) do.	do.	—
SODIUM AZIDE	Solid. Poisonous. In contact with moist air and acids will give off a poisonous gas. When directly heated (to 350°C.) will decompose with formation of metallic sodium. If it becomes heated gradually through proximity to a fire it may explode with considerable violence	Tinned iron containers of suitable make, hermetically sealed.	—	—	Packed with insulating material, such as woodwool, in wooden cases	—	On or under deck. Away from living quarters (see definition (B), page 5), food, foodstuffs, acids and all combustible cargo. It must not come in contact with copper, lead or other heavy metals or their compounds.	do.	4	C.
SODIUM DI-NITRO-ORTHO-CRESOLATE wet with not less than 30% water calculated on the wet weight.	Becomes explosive when dry but is less sensitive than Picric Acid. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	—	—	(1) On or under deck. Not in the same hold as inflammable substances and not in contact with lead or compounds of lead. Away from food and foodstuffs.	(1) Not allowed.	3	C.
		(2) Suitable barrels or cases of wood, effectively closed. Containers should be inspected for leakage before shipment and packages showing leakage or signs of leakage should be rejected	—	—	—	—	(2) do.	(2) do.	do.	C.
SODIUM SULPHIDE, containing not less than 30% water of crystallisation.	In contact with acid evolves hydrogen sulphide.	Any suitable container of sufficient strength to prevent any escape of the contents	—	—	—	—	Under deck. Away from acids.	As for cargo ships.	4	—

Appendix C

History of the Development of Rules for the Carriage of Explosives in Ships

1. Prior to the First World War, the Board of Trade had not issued any detailed rules as to the carriage of explosives in ships There was in existence a Memorandum relating to the Carriage of Dangerous Goods and Explosives in Ships, but as regards explosives this merely said that " No objection need be raised to the carriage of explosives if they are packed as required by the Order of the Secretary of State, are enclosed in a substantial magazine or compartment and are surrounded by non-inflammable goods ". The Memorandum also included extracts from the Explosives Act, the various Orders issued by the Home Office under that Act, the Model Code of Harbour Bylaws issued by the Board of Trade for the guidance of Dock and Harbour Authorities and extracts from the Regulations made by the Transport Department of the Admiralty for the conveyance of Government explosive stores

2. The Model Code included rules for the stowage of explosives in ships in the harbour which in addition to requiring the holds be free from grit and otherwise clean, contained rules as to the separation of the different classes of explosives from one another and their separation from dangerous cargo such as matches, petroleum, calcium carbide, mineral acids, etc.

3. The Transport Department Regulations divided service explosives into three groups. Of these the first group included such substances as cordite gunpowder, dynamite, dry guncotton and picric acid which had to be stowed in a magazine. Groups two and three did not require a magazine but had to be stowed in a " partitioned-off space " or in boxes Specifications for magazines, " partitioned-off spaces " were provided. The latter were similar but subject to less onerous conditions than magazines. The boxes were, in effect, portable magazines which could be used for quantities of explosives up to 2 tons.

4. In practice, therefore, practically all commercial explosives except safety cartridges and fuzes and many service explosives were carried in magazines. During the First World War discussions took place between the Marine Department of the Board of Trade, the Ministry of Shipping and the Service Departments with a view to allowing relaxations from this practice where this could safely be done and rules were drawn up which allowed a number of types of ammunition to be carried without a magazine but with special stowage away from other dangerous goods. An amended specification for magazines was also drawn up. These rules were published towards the end of the war and were later reproduced in the revised Dangerous Goods Memorandum issued by the Board of Trade in 1924

5. The subject was considered by the Committee, appointed by the Board of Trade in 1930, to consider the rules as to the carriage of dangerous goods and explosives in ships and that Committee adopted them, with certain amendments and with the addition of the rules made by the Home Office under the Explosives Act for the Classification and Packing of Explosives The rules are set out on pages 25 and 38 of the Appendix to the Committee's Report

It may be noted that the rules were stated not to apply to Government explosives, so far as these were shipped under special regulations laid down by the Government authority concerned The rules were, however, with the necessary amendments and amplifications, adopted by the Sea Transport Department (which had by that date been transferred to the Board of Trade) for regulating the carriage of service explosives in ships on commercial services.

6 The rules operated satisfactorily for a number of years, but just prior to 1939, the great increase in the quantities of commercial explosives being shipped led to practical difficulties, particularly as regards the parts of a ship in which magazines might be constructed and explosives not requiring magazines might be carried and several of the Board of Trade surveyors made suggestions for amending the rules As a result of consultation between the Ministry of Shipping, then the Department dealing with the matter, and the Chief Inspector of Explosives at the Home Office, a meeting was held early in 1940 between representatives of the Ministry and the Chairman and certain members of the Explosive Storage and Transport Committee. This is a standing Committee which deals with service explosives and regulates the storage and transport of all service ammunition and explosives in this country. As a result of this meeting it was agreed that a Sub-Committee of the Explosive Storage and Transport Committee should be formed, to be entitled the Sub-Committee on Sea Transport and including, in addition to representatives of the Committee, representatives of the Ministry of Shipping (later the Ministry of War Transport) and of the Shipping Industry As the Sea Transport Department of the Ministry were responsible for the loading of Government explosives in Merchant Ships and as the Transport Regulations were already under revision in consequence of changes which had been made in the classification of service explosives and the wide increase in their character, it was found most convenient first to deal with loading of Government explosives in what were entitled " freight ships ". These were ships primarily engaged in commercial services but in which the Director of Sea Transport had requisitioned space for the carriage of Government stores, including explosives The intention of this procedure was to prepare a complete revision of the rules for freight ships and then see whether they could be adapted so to cover the carriage of commercial types of explosives. The revised rules were drawn up and first published by the Ministry of War Transport in 1942 as an appendix to the Sea Transport Regulations under the title Conveyance of Government Explosives in Freight Ships during the Present Emergency (T 152). Simultaneously, a circular was published defining the manner in which the revised rules were to be applied to the carriage of commercial explosives. Advantage was taken of the publication of this document to bring up-to-date the rules as to the carriage of dangerous goods in ships, no comprehensive list having been published of the changes and additions which had been made since the publication of the Dangerous Goods Report in 1933. While revising the rules the Sub-Committee on Sea

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OP. 1100. 102. 020 (2)

THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

Amendment List No. 2 to the 1957 Report of the Standing Advisory Committee

Pages:
19–20
29–44
61–62
69–74
85–86a
93–94
99–100
131–132
149–150
155–156a
163–164
175–176
179–180
195–196
201–202
224a–224b
235–242

The attached pages replace the old pages which have similar numbers.

Page 15—Cartridges, Q.F., separate, gunpowder
Col. 3 Delete "B" and insert "C".

Page 97—Propionic Acid.
Col. 4. All packings. Delete "10%" and insert "5%".

Page 178—Sodium Nitrate.
Col. 3 Insert "New" before "sacks".

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Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Shell, practice (loose) ..	5	B	O.A.S.(D)	
Shell, practice (boxed)	6	B	O.A.S.	
Shell, radar echo (loose)	5	B	O.A.S.(D)	
Shell, radar echo (boxed)	6	B	O.A.S.	
Shell, shrapnel (loose) .	5	B	O.A.S.(D)	
Shell, shrapnel (boxed) ..	6	B	O.A.S.	
Shell, smoke	11	B	O.A.S.(D)	
Shell, smoke, F.M. or C.S.A.M.	11	B	S.A.S.(D)(R)	See Note 6
Shell, smoke, W.P. .	12	B	S.A.S.(D)(R)	See Note 8
Shell, star (loose) .	5	B	O.A.S.(D)	
Shell, star (boxed) .	6	B	O.A.S.	
Shot, tracer	5	B	O.A.S.(D)	
Shot, with tracer (boxed)	6	B	O.A.S.	
Signals	9	B	A.S.P.	See Note 5
Signals, drift, night	11	B	O.A.S.(D)	
*Signals, fog .. .	6	—	O.A.S.(C)	Safety Class
Simulators, gunflash .	9	B	A.S.P.	See Nota 5
Simulators, R.F. or M.G.	10	C	M.S.D.	
Sleeves, fuze .	10	C	M.S.D.	
Styphnic acid, dry, 1 oz. sample .	10	B	M.S.D.	
Styphnic acid, wet	4	C	M.S.L.	See Note 2
Switches ..	6	B	O.A.S.	
Switches, H.E.	8	C	O.A.S.	
Thunderflashes .	9	B	A.S.P.	See Note 5
T.N.T. .. .	4	C	M.S.B.	
Torpex	4	C	M.S.B.	
Tracers . .	9	B	A.S.P.	See Nota 5
Tritonal ..	4	C	M.S.B.	
Tubes, electric . ..	6	B	O.A.S.	
Tubes, friction	6	B	O.A.S.	
Tubes, percussion ..	6	B	O.A.S.	
Warheads ..	7	C	O.A.S.	

* See Note 3

NOTES RELATING TO THE LIST OF GOVERNMENT EXPLOSIVES COMPRISING SUB-SECTION B

Note 1

Picric acid, potassium di-nitro-phenate and di-nitro-resorcinol containing 33⅓ per cent. of water, calculated on the wet material, are non-explosive

Di-nitro-phenol containing 15 per cent of water calculated on the wet material is non-explosive.

Di-nitro-resorcinol, di-nitro-phenol, picric acid and potassium di-nitro-phenate may only be consigned as non-explosive when wetted as indicated and provided the di-nitro-resorcinol, di-nitro-phenol or potassium di-nitro-phenate is packed in a watertight package

Note 2

P.E.T.N. or R.D.X. must be wetted with 25 per cent. of water and styphnic acid with 20 per cent. of water, calculated on the wet material, for carriage by sea. This is a safety precaution only, and does not render the material non-explosive Watertight packages must be used.

Note 3

Explosives included in the Safety Class bear the Group 6 Government Explosives Label including the words " Safety Class " (older labels may include the words " Safety Cartridges " instead). They may be conveyed by passenger ship in any reasonable quantity either in peace or war, in their normal service packages.

Note 4

Fully assembled rockets H.E., or rockets, training, must be stowed with the head towards a bulkhead. Packages are marked to indicate the head.

Note 5

Group 9 explosives must not be overstowed.

Note 6

Packages containing ammunition charged with F.M or C.S.A.M. must bear the label or stencil, " S.A.S." when forwarded for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition must not be overstowed.

Note 7

Bombs, smoke, and clusters, incendiary, in Gronp 11 must not be over-stowed

Note 8

Packages containing explosives belonging to Group 12 requiring S.A.S. stowage must be labelled or stencilled " S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 9

The metallic containers must be airtight, a luting seal is not sufficient.

Note 10

Grenades, smoke, WP, when not packed in scored tinplate cylinders must be certified as having passed 100 per cent examination within one month before shipment.

When certified as packed in scored tinplate cylinders and to have been produced within one year of the date of shipment, the 100 per cent. examination of the grenades is not required.

When the period which has elapsed since production of grenades packed in these cylinders exceeds a year it must be certified that the scored cylinders have passed 100 per cent. external visual inspection for freedom from corrosion or damage, within three months before shipment.

Note 11

All types of chemical ammunition (other than shell, mortar ammunition, steel chemical bottles—when packed in activated charcoal—and lachrymatory stores) must have a conducting party.

Note 12

Packages containing explosives belonging to Group 13 must be labelled or stencilled "S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 13

O.A.S. conditions for cordtex are conditional upon the exposed ends of the explosives being effectively sealed and the use of a stout wooden package for the explosive. If these conditions are not fulfilled the stowage conditions will be M.S.A. Cordtex must not be overstowed.

Note 14

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours.

DANGEROUS GOODS OF NON-EXPLOSIVE CATEGORIES RELATED BY FRICTION TO EXPLOSIVES

There are some dangerous goods used in the Services which are categorised in the non-explosive categories of "Dangerous Goods" as given in Statutory Instrument No. 1977/1952 under the title "The Merchant Shipping (Dangerous Goods) Rules, 1952". The designations of these types together with the nature of the danger to which they give rise, as indicated by the categories to which they belong, are given in the following table.

Designation of Items (1)	Dangerous Substance (2)	Category in accordance with S.I. No. 1977 of 1952 (3)	Section of Report applicable (4)
Ampoules, acetone	Acetone	(v)	5
Ampoules for mine, practice, contact, A.Tk.	Chlorsulphonic acid mixture	(iii)	3
Bomb, aircraft, practice, flame, break-up 8½ lb.	Phosphide	(vi)	6
Bomb, aircraft, practice, smoke, break-up 8½ lb.	Titanium tetrachloride	(iii)	3
Bomb, aircraft, practice, smoke, filled F.M. or C.S.A.M.	Titanium tetrachloride or chlorsulphonic acid mixture,	(iii)	3
Bomb, incendiary, AN-M, lb., filled T.P.1. (See Group 15 for these bombs fitted with exploders)	Petrol	(v)	5
Candles, smoke, white	Phosphide	(vi)	6
Container, smoke	Titanium tetrachloride	(iii)	3
Destructor, incendiary No. 2 (See Group 11 for other numbers)	Petrol	(v)	5
Drums, F.M. ..	Titanium tetrachloride	(iii)	3
Drums, aniline-furfuryl alcohol mixture	Aniline and furfuryl alcohol	(iv)	4 stowage away from acids
Drums, inhibited red fuming nitric acid	Fuming nitric acid	(iii)	3
Flamefloats, aircraft, navigation	Phosphide	(vi)	6
Generator, smoke, Y4 F.F. training, with touch paper ignition (See Group 11 for electric fuze ignition)	Sulphur and sodium nitrate	(x)	7b
Installation, S.C., type G, lb., filled F.M.	Titanium tetrachloride	(iii)	3
Light, indicating lifebuoy .	Phosphide .	(vi)	6
Light, indicating torpedo .	Phosphide .. .	(vi)	6
Marker, marine, aircraft .	Phosphide	(vi)	6
Marker, sea, aluminium .	Aluminium powder	(vi)	6
Matches, flamer . .	Match composition	(x)	7b
Matches, fuzee, safety ..	Match composition	(x)	7b
Matches, waterproof safety .	Match composition	(x)	7b
Mine charge cases, filled sodium phosphide	Phosphide ..	(vi)	6
Pistols, aircraft bomb with acetone ampoules	Acetone . ..	(v)	5
Slow match .	Potassium nitrate .	(x)	7a
Submarine bubble decoy ..	Magnesium and iron powder	(vi)	6

These types of ammunition must not be labelled or marked to suggest they contain explosives and must not be consigned for transport as explosives. The package (or weapon, if loose) must be stencilled or labelled to indicate the designation of the ammunition, the substance contained which brings it under the "Dangerous Goods" Rules and the nature of the risk corresponding to its category as given in the Rules, e.g. Installation, S.C., Type G, 250 lb.—Titanium Tetrachloride-Corrosive. In the case of ammunition belonging to Category (v) it is also necessary to add stencilling or a label bearing the words "Highly Inflammable—Flash Point below 73°F." or "Inflammable—Flash Point 73°–150°F.", as applicable. The stowage of these types of ammunition in relation to explosives will be governed by the conditions laid down for the dangerous substance which they contain

CLASSIFIED LIST OF COMMERCIAL EXPLOSIVES SHOWING HOME OFFICE CLASS AND DIVISION, EQUIVALENT SERVICE CLASSIFICATION AND STOWAGE CONDITIONS REQUISITE FOR EACH ITEM

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section I)
Ajax "S"	III 1	2	M.S B.
Aluminite No. 1	III 2	4	M.S B
Aluminite No 2	III 2	4	M.S B
Aluminite No. 3	III 2	4	M.S B
Aluminium Torches	VII 2	9	A.S.P.
Aluminium Torches, Standard Brand	VII 2	9	A.S P.
Amatol	III 2	4	M.S.B
Amberite No 2	III 2	4	M S B
(*b*) American Ballistite	III 1	2	M S.B.
Ammonal	III 2	4	M.S.B
Ammonal No. 3	III 2	4	M.S.B.
Ammonal "M"	III 2	4	M.S.B
Ammon Dynamite	III 1	2	M.S B
Ammonex	VI 2	6	O.A.S.
Ammon Gelatine	III 1	2	M S.B.
Ammon Gelatine Dynamite	III 1	2	M.S.B.
Ammon Gelignite	III 1	2	M.S B
Ammon Gelignite No. 2	III 1	2	M.S B.
Ammon Gelignite No 3	III 1	2	M.S B
Ammonium Picrate	III 2	1	M S.L.
(*a*) Amorces	VII 2	9	A S.P.
A N Gelatine Dynamite "75"	III 1	2	M S.B.

(*b*) This explosive becomes Group I with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

(*a*) These explosives are only authorised for transport when packed in a particular manner

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section I)
A N Gelignite "60"	III 1	2	M S B.
A.N. Gelignite "50"	III 1	2	M.S.B.
A N Gelignite "40"	III 1	2	M.S.B.
Antifrost Ammon Gelatine Dynamite	III 1	2	M.S B.
Antifrost Ammon Gelignite	III 1	2	M S.B.
Antifrost Ammon Gelignite A, B, C, E, F, G	III 1	2	M.S.B.
Antifrost Blasting Gelatine	III 1	2	M.S B.
Antifrost Nitrox No. 2 "S"	III 1	2	M.S.B.
Antifrost N.S Gelatine Dynamite	III 1	2	M.S.B.
Antifrost Penrhyn Powder "S"	III 1	2	M.S B.
Antifrost Penrhyn Powder No 2 "S"	III 1	2	M.S.B.
Antifyre Percussion Caps	VI 1	6	O.A.S (C)*ø*
Arctic Dynamite	III 1	2	M.S B.
(*b*) Ardeer Ballistite	III 1	2	M S.B.
Ardeer Cordite	III 1	3	M.S.B.
Ardeer Propellant Composition No. 2 ("A P.C No 2")	III 2	3	M S.B.
Ardex	III 2	4	M.S.B.
(*b*) Armorite	III 1	2	M.S.B.
A.R.P. Practice Incendiary Bombs	VII 2	9	A S P.
A/S Indicators Training No 1	VII 2	9	A S P
Auxiliary Cartridges	VI 2	6	O A S.

ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8.

(*b*) This explosive becomes Group I with stowage conditions M.S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Axite No. 3	III 1	2	M.S.B.
Azofog Insecticidal Smoke Generator	VII 2	11	O.A.S.(D)
(*b*) Ballistite	III 1	2	M.S.B.
(*b*) Ballistite A 16	III 1	2	M.S.B
(*b*) Ballistite B 16	III 1	2	M.S.B.
(*b*) Ball Powder	III 1	2	M.S.B.
Baratol	III 2	4	M.S.B.
* Barium Tri-nitro-resorcinate	V 2	10	M.S.D.
(*a*) Battery Pockets	VI 1	6	O.A.S.(C)ø
Belex	III 1	2	M.S.B.
Belex 1.1	III 1	2	M.S.B.
Belex 2.2	III 1	2	M.S.B.
Belex 3.3	III 1	2	M.S.B.
Belex 4.4	III 1	2	M.S.B.
Belex 5.5	III 1	2	M.S.B.
(*a*) Belisha Beacons	VII 2	9	A.S.P.
Bengal Sparklers (1st, 2nd, 3rd, 4th, 5th, 6th Definitions)	VII 2	9	A.S.P.
Bengal Torches (1st, 2nd, 3rd Definitions)	VII 2	9	A.S.P.
Bickford's Patent Volley Firers	VI 2	6	O.A.S.
Bird Scarers	VII 2	9	A.S.P.
Blackpowder Igniter Wick	VI 2	1	O.A.S.
Blasting Abelite	III 2	4	M.S.B.
Blasting Gelatine	III 1	2	M.S.B.
Blasting Gelatine (A)	III 1	2	M.S.B.
Blasting Matagnite	III 1	2	M.S.B.
Bombs, Aircraft, Target Identification	VII 2	9	A.S.P.
Bombs, Aircraft, Training, Smoke and Flash No. 1 (25 lbs.)	VII 2	9	A.S.P.
Brock's Bengals	VII 2	9	A.S.P.
Brock's Igniters	VII 2	9	A.S.P.
Brock's Smoke Generators Types B 1, B 2, B.3 and B 4	VII 2	9	A.S.P.
Burrowite	III 2	4	M.S.B.
Burrowite No. 1	III 2	4	M.S.B.
Burrowite No. 2	III 2	4	M.S.B.
Burrowite No. 3	III 2	4	M.S.B.
Burrowite G.N.	III 2	4	M.S.B.
Burrowite M.B. Rex	III 2	4	M.S.B.
Burrowite Super Rex	III 2	4	M.S.B.
Candles, Smoke, Yellow	VII 2	11	O.A.S.(D)
Capped (Detonator) Safety Fuze	VI 3	10	M.S.D.
Capped Fuzes with Connectors	VI 3	10	M.S.D.
Carrick Short Delay Detonators	VI 3	10	M.S.D.
Cartridges for Cannon, etc., O. in C. No. 1	VI 2	3	M.S.B.
Cartridges for Emergency Undercarriage Lowering Device	VI 2	6	O.A.S.
Cartridges for Velocity Power Drive	VI 3	6	O.A.S.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No. 798 (1949)

(*a*) These explosives are only authorised for transport when packed in a particular manner

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Cartridges for Small Arms, O. in C. No. 1	VI 2 & 3	6	O.A S.
Cartridges, Illuminating	VII 2	9	A.S.P.
Cartridges, Safety	VI 1	6	O.A S (C)ø
Cartridges, Signal	VII 2	9	A S.P.
Cases, Cartridges, Safety Capped (Empty)	VI 1	6	O.A.S (C)ø
Cases for Turbo-Starter Cartridges (Empty) Primed	VI 1	6	O.A S (C)ø
C.D.B	III 1	3	M.S.B.
C.D B Rocket Motors	VI 2	6 (boxed) 8 (loose)	O.A S.
Celmonal	III 2	4	M.S B.
Celmonal X	III 2	4	M.S B.
Celmonite	III 2	4	M.S.B.
Celmonite Ripping	III 2	4	M.S B.
Chemical Heater Igniters	VI 2	6	O.A S.
Chemical Heater Igniters, Type B	VI 2	6	O A S.
(*b*) Chilworth Smokeless Powder No. 2	III 1	2	M S.B.
(*b*) Clermonite Powder No. 2	III 2	2	M S B.
Colespex	III 1	2	M S.B.
Colex No. 1 " S "	III 1	2	M S.B.
Colex No. 2 " S "	III 1	2	M S.B.
Colliery Explosive " C.7 "	III 2	4	M S.B.
Collodion Cotton	III 2	4	M S B.
Coloured Fire Torches	VII 2	9	A.S.P.

ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8.

(*b*) This explosive becomes Group I with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section I)
Coloured Flame Torches	VII 2	9	A S.P.
Coloured Smoke Candles	VII 2	9	A.S.P.
Coloured Sparklers	VII 2	9	A.S P.
Commercial Waterproof Primers	III 2	4	M.S.B.
Compex No. 1	III 1	2	M S B.
Compex No 2	III 1	2	M.S.B
Composition P N. (Type A)	IV 2	1	M.S A.
Composition P N (Type B)	II	1	M S A.
Composition P.N (Type C)	IV 2	11	U.C S
Composition P.N. (Type D)	II	11	O.A S (D)
Composition S R. (Type A)	IV 2	1	M.S.A.
Composition S R. (Type B)	II	1	M S.A
Composition S.R. (Type C)	IV 2	11	O.A.S (D)
Composition S R. (Type D)	II	11	O.A.S.(D)
Confetti Bombs	VII 2	9	A.S.P.
Cooke's Explosive No 104	III 2	4	M.S B.
Cooke's Explosive No. 124	III 1	2	M S B.
(*b*) Cooppal's Excelsior Powder	III 2	2	M S B.
(*b*) Cooppal's Minerva Smokeless Powder	III 2	2	M.S B
(*b*) Cooppal's No 2 Smokeless Powder	III 2	2	M.S.B
(*b*) Cooppal's Perfecta Powder	III 2	2	M.S.B.
(*a*) Co-precipitated Lead Azide/ Lead Di-nitro-resorcinate	V 2	10	M S D.
Cordeau Bickford	VI 2	4	O A S.
Cordite	III 1	3	M S B

(*a*) These explosives are only authorised for transport when packed in a particular manner

(*b*) This explosive becomes Group 1 with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Cordite A	III 1	3	M.S.B.
Cordite A.N.	III 1	3	M S.B.
Cordite A.S.N	III 1	3	M S.B.
Cordite C.D	III 1	3	M S.B.
Cordite C.D P.	III 1	3	M S.B.
Cordite D.B.P.	III 1	3	M S.B.
Cordite H.W.	III 1	3	M S B
Cordite M.D.	III 1	3	M S B.
Cordite N.	III 1	3	M S B.
Cordite N.K.	III 1	3	M S B.
Cordite N.P.	III 1	3	M S B.
Cordite N.Q	III 1	3	M S B.
Cordite N Q K.	III 1	3	M S.B
Cordite N.Q.P	III 1	3	M.S B
Cordite R.D.N./A.Q	III 1	3	M S B
Cordite R.D.Q	III 1	3	M.S B
Cordite W.	III 1	3	M S.B
Cordite W.M.	III 1	3	M S B
Cordtex	VI 2	1	O.A.S.
Cordtex Train Assemblies	VI 2	6	O.A S
(*a*) Crack Shots	VII 2	9	A.S.P.
Curtis's and Harvey's Safety Electric Fuzes	VI 1	6	O A S (C)ø
* Cyclotrimethylene Trinitramine (R.D.X.)	III 2	4	M.S B.

(*a*) These explosives are only authorised for transport when packed in a particular manner.

ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8.

* Must be wetted with not less than 25 per cent. of water calculated on the wet material.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
(*b*) D.B. Casting Powder	III 2	2	M S.B.
(*b*) D.B.C. Casting Powder	III 1	2	M S B
Delay Arming Cartridge Unit	VI 3	6	O.A S.
Delay Composition	II	1	M S A.
Delay Detonators	VI 3	10	M S.D.
Delay Puffers	VI 3	10	M S.D.
Delay Fuze Assembly (10 Seconds)	VI 1	6	O A S.(C)ø
Denespex	III 1	2	M.S B.
Detonating Fuze	VI 2	4	O A.S
Detonating Fuze Boosters (D.F. Boosters)	VI 2	1	M S A
Detonating Relays	VI 3	10	M S.D.
Detonators, O. in C. No. 1	VI 3	10	M S D.
Detonators, Electric	VI 3	10	M S.D.
Detonators for 20 mm. Hispano Ammunition	VI 3	10	M S.D.
Detonator Packs	VI 3	10	M.S D.
Detonator Time Fuze	VI 3	10	M S.D.
Detonita	III 1	2	M S B.
§ Di-nitro-phenol	III 2	4	M S.L.
† Di-nitro-resorcinol	III 2	4	M.S.L.
Distress Signal Rockets	VII 2	9	A S P.
Driftex " S "	III 1	2	M S B.

(*b*) This explosive becomes Group 1 with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8.

§ Di-nitro-phenol containing 15 per cent. of water, calculated on the wet material, is not explosive.

† Di-nitro-resorcinol containing 33⅓ per cent. of water, calculated on the wet material, is non-explosive.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Drogue Ejector Cartridges	VI 1	6	O A.S (C)ø
DuPont Extra C	III 1	2	M.S.B
DuPont Extra D	III 1	2	M S B
DuPont Gelatin L.F.	III 1	2	M.S.B
(*b*) DuPont Powder No. 15	III 2	2	M.S.B.
(*b*) DuPont Powder No. 16	III 2	2	M.S.B.
(*b*) DuPont Powder No. 25	III 2	2	M S B
(*b*) DuPont Smokeless Shotgun Powder	III 2	2	M.S.B
Duprelite	III 1	2	M S B
Duprex	III 1	2	M.S.B.
Dynamite	III 1	2	M S B
Dynamite No. 1	III 1	2	M S.B
Dynobel No. 2 " S "	III 1	2	M.S.B.
(*b*) E.C. Sporting Powder	III 2	2	M S B
Electric Boosters	VI 3	10	M S D
Electric Detonators	VI 3	10	M S.D.
Electric Detonators for Boosters	VI 3	10	M S D
‡ Electric Fuzes (1st, 2nd, 3rd and 4th Definitions)	VI 2	6	O A.S.
Electric Lighters for Igniter Cord	VI 1	6	O A.S ø
Electric Primers	VI 2	6	O.A.S
Electric Seismic Primer	VI 3	10	M S.D.
Electric Sparklers	VII 2	9	A S.P.

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

‡ In any Licence the expression " Electric Fuzes " also includes all Safety Electric Fuzes of Class VI, Division 1.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Electrosounders	VI 3	10	M S.D
(*a*) Eley Kynoch No. 1A Percussion Cap	VI 1	6	O.A S (C)ø
(*a*) Eley Kynoch No. 1B Percussion Cap	VI 1	6	O.A S.(C)ø
(*a*) Eley Kynoch No. 91 Percussion Cap	VI 1	6	O A S.(C)ø
(*b*) Empire Powder	III 2	2	M S.B
Equamite	III 2	4	M S.B
Equicol	III 1	2	M S.B.
Equinox	III 1	2	M.S.B.
Eversoft Ammon Gelignite	III 1	2	M.S.B
Eversoft Blasting Gelatine	III 1	2	M.S.B.
Eversoft Gelamex	III 1	2	M S B
Eversoft Gelamex No. 1	III 1	2	M S B
Eversoft Gelamex No. 2	III 1	2	M.S B
Eversoft Gelamex No. 2(C)	III 1	2	M S B
Eversoft Gelamex No. 3	III 1	2	M S B.
Eversoft Gelamex No. 3(C)	III 1	2	M.S B.
Eversoft Gelamex " C "	III 1	2	M.S B.
Excelsior Safety Electric Fuzes	VI 1	6	O.A.S.(C)ø
Exploders for Bombs and for Mines	VI 3	1	M.S A.
Exploders for Shells, Bombs, Mines, Depth Charges and Torpedoes	VI 2	1	M.S A.
Exploders for Shell	VI 3	1	M S.A.
Explosive C	III 2	4	M.S B.
(*a*) Explosive Corks	VII 2	9	A S P.

(*a*) These explosives are only authorised for transport when packed in a particular manner.

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8.

(*b*) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Explosive Motors	VI 1	6	O.A S ø
Ferrule Igniter for Safety Fuze	VI 1	6	O.A S ø
Filled Bombs and Grenades	VI 2 & 3	7, 7a & 8	O.A.S
Filled Bombs, Depth Charges, Mines and Torpedoes	VI 2 & 3	7 & 7a	O.A S
Filled Gaines	VI 2 & 3	6	O.A S.
Filled Shells	VI 2 & 3	5 & 6	O A.S.
Fire Detector and Fire Extinguisher Actuator	VI 2	6	O A.S.
Firework Composition	VII 1	1	M S.A.
Fireworks, Manufactured	VII 2	9	A.S P
Flame Detector Cord	VI 1	6	O.A S (C)ø
Flares, Trip-Wire	VII 2	9	A.S.P
(*a*) Flashlight Ignition Caps (1st and 2nd Definitions)	VII 2	6	O.A.S
(*a*) Flashlight Ignition Tape	VII 2	9	A.S P.
Flash Sound Signals	VII 2	9	A.S P
Float Flares	VII 2	9	A.S P
Float, Lachrymatory	VI 3	13	S.A.S (D) (R)
Float, Signal, Submerged, with Grenade	VII 2	9	A S.P
Floats, Smoke, Flare, 3½ lb	VII 2	9	A S.P
Fog Signals, Railway, O. in C. No 1	VI 1	6	O A S (C)ø
Friction Tubes	VI 3	6	O.A S (C)
* Fulminate of Mercury	V 1	10	M S.D

ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8.

(*a*) These explosives are only authorised for transport when packed in a particular manner.

* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No 798 (1949).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Fuzehead Assemblies	VI 1	6	O A.S (C)ø
§ Fuze Heads for Cardox Heaters	VI 2	6	O A.S.
§ Fuze Heads for Delay Detonators	VI 2	9	A.S P.
§ Fuze Heads for Electric Detonators and Safety Electric Fuzes (1st and 2nd Definitions)	VI 2	6	O.A S.
Fuze Igniters	VI 2	6	O.A S.
Fuze Lighters (1st, 2nd and 3rd Definitions)	VI 2	6	O.A S.
Fuzes for Shells, Bombs and Flares	VI 2 & 3	6	O.A.S (C)
Gelatine	III 1	2	M S B.
Gelatine (A)	III 1	2	M S.B.
Gelatine Dynamite	III 1	2	M S.B.
Gelex A	III 1	2	M S B.
Gelignite	III 1	2	M S B.
Gelignite (A)	III 1	2	M S B.
Gelignite No 2	III 1	2	M.S B
Gelignol	III 1	2	M S B.
Geobel	III 1	2	M S B.
Geobel No 2	III 1	2	M S B.
Geobel No 3	III 1	2	M.S B
Geophex	III 1	2	M.S B.
(*a*) Giant Disc Amorces	VII 2	9	A.S P.
Glasgow Dynamite	III 1	2	M S B
Glasgow Dynamite (A)	III 1	2	M S B.

ø May also be O A.S (D) subject to paragraph 8 on pages 7 and 8.

§ These fuzeheads are only authorised for transport under a special Packing Authority.

(*a*) These explosives are only authorised for transport when packed in a particular manner.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Gloria Torches	VII 2	9	A.S.P.
Gradeley Powder	III 2	4	M.S.B.
Grancol	III 1	2	M.S.B.
(*b*) Granulated Guncotton Powder	III 2	2	M.S.B.
Granulex	III 1	2	M.S.B.
Guncotton	III 2	1	M.S.A.
Gunpowder	I	1	M.S.A.
H Attachments	VI 2	10	M.S.D.
Hawkite No. 2 " S "	III 2	4	M.S.B.
Hawkite No. 3 " S "	III 2	4	M.S.B.
Hexachlorethane Smoke Candles	VI 3	11	O.A.S.(D)
High Velocity Gelatin	III 1	2	M.S.B.
(*b*) Husite	III 2	2	M.S.B.
Hydrobel " S "	III 1	2	M.S.B.
Hydrox Igniter No. 1 Safety Electric Fuze	VI 1	6	O.A.S.(C)ø
Hydrox Initiator Nos. 2, 3 and 4	VI 3	6	O.A.S.
Igniter Cord Connectors	VI 1	6	O.A.S.ø
Igniter, Ramjet	VI 2	6	O.A.S.
Igniters for Grenades	VI 1	6	O.A.S.(C)ø
Igniters for Hand Grenades	VI 3	10	M.S.D.
Igniters for M.O.C. Cartridges	VI 2	1	M.S.A.
Igniters for M.O.C. Cartridges (Type 7)	VI 2	1	M.S.A.
Igniters for M.O.C. Cartridges (Type 12)	VI 2	6	O.A.S.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Igniters for Rocket Motors	VI 2	—	M.S.A.
Igniters, Gunpowder (1st, 2nd and 3rd Definitions)	VI 2	1	M.S.A.
Igniters, Gunpowder, Electric	VI 2	6	O.A.S.
Igniters, Percussion (2nd Definition)	VI 3	6	O.A.S.
Igniticap Electric Detonator	VI 3	10	M.S.D.
Igniticap Electric Detonator with H Attachment	VI 3	10	M.S.D.
Ignition Charges, R.M. No. 1	VI 2	1	M.S.A.
(*b*) Improved Ballistite	III 1	2	M.S.B.
Incendiary Bombs	VI 3	11	O.A.S.(D)
Incendiary Cartridges	VI 2	11	O.A.S.(D)
Incendiary Shells	VII 2	11	O.A.S.(D)
Incendiary Stars	VII 2	11	O.A.S.(D)
Infugel	III 1	2	M.S.B.
Instantaneous Fuze	VI 2	6	O.A.S.
Joke Bombs	VII 2	9	A.S.P.
Joke Cigarettes	VII 2	9	A.S.P.
Kynoch Fog Signal Caps	VI 1	6	O.A.S.(C)ø
(*a*) Kynoch No. 41 Percussion Cap	VI 1	6	O.A.S.(C)ø
(*a*) Kynoch No. 70 Percussion Cap	VI 1	6	O.A.S.(C)ø
(*a*) Kynoch No. 81 Percussion Cap	VI 1	6	O.A.S.(C)ø

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

(*a*) These explosives are only authorised for transport when packed in a particular manner.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
(*a*) Kynoch No. 146 Percussion Cap	VI 1	6	O A S (C)ø
(*a*) Kynoch Rail Car Fog Signals	VI 1	6	O A S (C)ø
* Lachrymatory Generators	VI 3	13	S.A S (D)
* Lachrymatory Generators Nos. 1 and 2	VI 3	13	S A S (D)
* Lachrymatory Generators (Naval)	VI 3	13	S.A S (D) (R)
Landing Flares	VII 2	9	A S P
Large Gas Producing Charges (Engine Starters)	VI 2	6	O A.S.
† Lead Azide	V 2	10	M S.D.
‡ Lead Di-nitro-resorcinate	V 2	10	M S D.
‡ Lead Tri-nitro-resorcinate	V 2	10	M.S.D.
Lesslak	III 1	2	M S.B.
L F Ammonia Dynamite, 40 per cent strength	III 1	2	M S B
L F Ammon Gelatine	III 1	2	M.S.B.
L.F Ammon Gelatine, 90 per cent. strength	III 1	2	M.S.B
L.F Blasting Gelatine	III 1	2	M S.B.
L.F. Detonita	III 1	2	M.S.B.
L.F. Gelatine	III 1	2	M.S.B.
L.F Gelignite	III 1	2	M.S B
L F. Geobel	III 1	2	M S B
L F Geobel No 2	III 1	2	M S B

(*a*) These explosives are only authorised for transport when packed in a particular manner.
ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8
* Not for general sale.
† This explosive is only authorised for transport under a Special Packing Authority.
‡ These explosives are only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No. 798 (1949)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Life-boat Parachute Signal Rockets	VII 2	9	A S P
L.G. Gelatine	III 1	2	M.S B.
(*b*) Light Load Smokeless	III 2	2	M S B.
Lightning Paper	VII 2	9	A S.P
Lodensite	III 1	2	M.S B.
Lodensite No. 2	III 1	2	M S B.
Lodespex	III 1	2	M S B.
Lump-Kol Pellet Powder	II	1	M S A
Magnesium Torches	VII 2	9	A S P
Manufactured Fireworks	VII 2	9	A.S.P
Markers, Marine No 4, Mark I	VII 2	11	O.A S (D)
(*b*) M C. Smokeless Powder	III 2	2	M S B.
(*b*) Mechanite	III 1	2	M S B
Military Ammonal	III 2	4	M S.B.
Military Burrowite	III 2	4	M S B.
Military Delay Detonators	VI 3	10	M S.D.
Military Detonators	VI 3	10	M S D.
Mine " M " Alarm Igniters	VI 3	10	M.S D.
Miners' Portfires	VI 2	9	O.A S
Miners' Squibs	VI 2	6	O.A.S.
Minespex	III 1	2	M S B.
Minex " S "	III 1	2	M S B
(*a*) M O C. Cartridges (Type 1)	VI 1	6	O A.S (C)ø

(*b*) This explosive becomes Group I with stowage conditions M.S A if it is not packed in an airtight metallic container (luting sealed containers are excluded)
(*a*) These explosives are only authorised for transport when packed in a particular manner.
ø May also be O A.S (D) subject to paragraph 8 on pages 7 and 8

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
M.O.C. Cartridges (Type 2)	VI 2	6	O.A.S.
M O.C. Cartridges (Type 3)	VI 3	6	O A.S
(*a*) M O.C. Cartridges (Type 4)	VI 1	6	O A S (C)ø
M O.C. Cartridges (Type 5)	VI 1	6	O A.S ø
(*a*) M O.C. Cartridges (Type 6)	VI 1	6	O A S (C)ø
M.O.C. Cartridges (Type 7)	VI 2	6	O A.S
M O.C. Cartridges (Type 8)	VI 2	6	O A.S
(*a*) M.O.C. Cartridges (Type 9)	VI 1	6	O.A S ø
M O.C. Cartridges (Type 10)	VI 2	6	O.A.S.
M O.C. Cartridges (Type 11)	VI 2	6	O.A.S.
M O.C. Cartridges (Type 12)	VI 2	6	O.A.S
(*b*) Modified E.C. Powder	III 2	2	M S.B.
(*b*) Modified Neodisc	III 2	2	M.S.B.
(*b*) Modified Neoflak	III 2	2	M.S.B.
(*b*) Modified Smokeless Diamond	III 2	2	M S.B.
Monobel No. 1	III 1	2	M S B
Morcol	III 1	2	M S.B.
Mortar Parachute Signals	VII 2	9	A S.P.
Multiple Detonators, Type V	VI 3	10	M.S.D.
(*b*) N.C. (Y)	III 2	2	M S.B
(*b*) Neodisc	III 2	2	M.S B
(*b*) Neoflak	III 2	2	M S B

(*a*) These explosives are only authorised for transport when packed in a particular manner.
ø May also be O A.S (D) subject to paragraph 8 on pages 7 and 8.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(*b*) Nitrated Guncotton	III 2	2	M.S.B.
Nitrocellulose	III 2	1	M S.A
(*b*) Nitrocellulose Cannon Powder	III 2	2	M S.B.
(*b*) Nitrocellulose Rifle Powder	III 2	2	M.S.B.
Nitro-Cotton	III 2	1	M S.A.
Nitroguanidine	III 2	4	M S.B.
* Nitromethane	III 2	1	U.C.S.
Nitropolystyrene	III 2	4	M.S B
Nitrovene	III 2	4	M S.B.
(*a*) No. 41 Percussion Cap	VI 1	6	O.A.S.(C)ø
No. 2 Smoke Floats	VI 2	11	O.A.S.(D)
(*b*) Nobel Acurex Powder	III 2	2	M.S.B.
(*b*) Nobel Acurim Neonite	III 2	2	M S.B.
(*b*) Nobel Acurim Neonite No. 2	III 2	2	M S.B.
(*b*) Nobel Cadet Neonite	III 2	2	M S.B.
(*b*) Nobel C.K. Powder No 1	III 1	2	M.S B
(*b*) Nobel C.K. Powder No 2	III 1	2	M.S B
(*b*) Nobel Cordite	III 1	2	M.S B.
(*b*) Nobel Cordite No. 2	III 1	2	M S B.
Nobel Fuze Heads No 15	VI 2	6	O.A.S
(*b*) Nobel Glasgow Shotgun Powder	III 1	2	M.S B
(*b*) Nobel Hornet Powder	III 1	2	M S B

(*b*) This explosive becomes Group I with stowage conditions M S A if it is not packed in an airtight metallic container (luting sealed containers are excluded).

* Only when confined is it an explosive. It should be noted that the word "confined" means this substance contained in a pressure vessel and does not apply to the ordinary container used for conveyance.

(*a*) These explosives are only authorised for transport when packed in a particular manner.
ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para 21 of Section 1)
(*b*) Nobel Igniter Powder	III 1	2	M S B
(*b*) Nobel Nitro-cellulose Powder	III 2	2	M S.B.
(*b*) Nobel Nitro-cellulose Powder No. 1	III 2	2	M.S.B.
(*b*) Nobel Parabellum Powder	III 1	2	M S B.
(*b*) Nobel P.G. Powder	III 2	2	M S B.
(*b*) Nobel Powder No. 52	III 1	2	M S B.
(*b*) Nobel Revolver Neonite	III 2	2	M.S.B
(*b*) Nobel Rifle Neonite	III 2	2	M S B.
(*b*) Nobel Rimfire Powder	III 1	2	M.S.B
(*b*) Nobel Rim Neonite	III 2	2	M.S.B.
Nobel Seismic Booster	VI 2	4	O.A.S.
Nobel Shaped Charge	VI 2	7	O.A.S
(*b*) Nobel Shotgun Neonite	III 2	2	M S B.
(*b*) Nobel Shotgun Powder	III 1	2	M S B.
(*b*) Nobel Superim Powder	III 1	2	M.S.B.
Nobelite	II	4	M.S.B.
Nobelite Primer	III 1	2	M.S.B
Nobel's Composite Explosive No. 966	III 1	2	M.S B
† Nobel's Delay Composition R.885	V 2	10	M S D.
Nobel's Delay Composition R.894	II	1	M S.A.
Nobel's Delay Composition R.998	III 2	1	M S A.
† Nobel's Delay Composition R.1006	V 2	10	M S.D.
† Nobel's Delay Composition R.1149	V 2	10	M S D.
Nobel's Electric Delay Action Detonators	VI 3	10	M S D
Nobel's Electric Delay Fuzes	VI 2	6	O.A.S.
Nobel's Electric Delay Action Fuzes	VI 1	6	O.A.S.(C)ø
Nobel's Electric Delay Powder Fuzes	VI 2	6	O.A.S.
Nobel's Explosive No. 256	IV 2	1	M.S.A.
Nobel's Explosive No. 536	III 1	2	M.S.B.
Nobel's Explosive No. 549	III 1	2	M S.B.
Nobel's Explosive No. 568	III 1	2	M.S.B.
Nobel's Explosive No. 649A	III 1	2	M.S.B.
Nobel's Explosive No. 649B	III 1	2	M.S.B.
Nobel's Explosive No. 673	III 1	2	M.S.B.
Nobel's Explosive No. 695	III 1	2	M.S B.
Nobel's Explosive No. 695A	III 1	2	M S B
Nobel's Explosive No. 704	III 2	4	M.S.B.
Nobel's Explosive No. 704B	III 2	4	M S.B.
Nobel's Explosive No. 808	III 1	2	M S B.
Nobel's Explosive No. 809	III 1	2	M S.B.
Nobel's Explosive No. 831	III 2	4	M.S.B
Nobel's Explosive No. 847	III 1	2	M.S.B.
Nobel's Explosive No. 850	III 2	4	M S.B.
Nobel's Explosive No. 852	III 2	4	M.S B.
Nobel's Explosive No. 857	III 2	4	M.S B.
Nobel's Explosive No. 880	III 2	4	M S.B.
Nobel's Explosive No. 881	III 2	4	M.S B
Nobel's Explosive No. 882	III 2	4	M.S B
Nobel's Explosive No. 883	III 2	4	M S B

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

† These explosives are only authorised for transport under a Special Packing Authority

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Nobel's Explosive No 884	III 2	4	M S B
Nobel's Explosive No. 887	III 1	2	M S B.
Nobel's Explosive No 894	III 2	4	M S.B.
Nobel's Explosive No. 895	III 1	2	M S B.
Nobel's Explosive No 896	III 2	4	M.S B.
Nobel's Explosive No. 898	III 1	2	M S B.
Nobel's Explosive No. 901	III 1	2	M.S.B
Nobel's Explosive No 906	III 1	2	M S B.
Nobel's Explosive No 907	III 1	2	M.S B
Nobel's Explosive No 916	III 1	2	M S.B.
Nobel's Explosive No. 919	III 2	4	M S B.
Nobel's Explosive No. 920	III 2	4	M S B.
Nobel's Explosive No. 924	III 1	2	M S.B
Nobel's Explosive No 937	III 1	2	M.S.B.
Nobel's Explosive No 944	III 1	2	M S B.
Nobel's Explosive No. 945	III 2	4	M S B
Nobel's Explosive No 964	III 1	2	M S B
Nobel's Explosive No 968	III 1	2	M S B.
Nobel's Explosive No 999	II	4	M S B
Nobel's Explosive No 1000	III 2	4	M S B
Nobel's Explosive No 1001	III 1	2	M S B
Nobel's Explosive No. 1066	III 1	2	M.S B
(*b*) Nobel's Explosive No. 1091	III 1	2	M.S B
Nobel's Explosive No. 1105	III 1	2	M.S B

(*b*) This explosive becomes Group 1 with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Nobel's Explosive No 1157	III 2	4	M S B
Nobel's Explosive No. 1177	III 2	4	M S B.
Nobel's Explosive No. 1181	III 1	2	M.S.B.
(*b*) Nobel's Explosive No. 1182	III 1	2	M S B
Nobel's Explosive No. 1186	III 1	2	M S.B
Nobel's Explosive No. 1200	III 1	2	M S B
Nobel's Explosive No 1201	III 1	2	M.S B
Nobel's Explosive No. 1213	III 1	2	M S B.
Nobel's Explosive No 1220	III 1	2	M S.B.
Nobel's Explosive No. 1235	III 1	2	M S.B
Nobel's Explosive No. 1243	II	4	M.S B
Nobel's Explosive No. 1244	III 2	4	M.S.B
Nobel's Explosive No. 1245	III 2	4	M.S B
Nobel's Explosive No 1257	III 1	2	M.S.B
Nobel's Explosive No. 1258	III 1	2	M S.B
Nobel's Explosive No. 1263	III 1	2	M S B.
Nobel's Explosive No. 1267	II	4	M S B.
Nobel's Explosive No. 1268	III 2	4	M S.B.
Nobel's Explosive No 1271	II	4	M S.B
Nobel's Explosive No. 1281	II	4	M S.B.
Nobel's Explosive No. 1284	II	4	M S.B
Nobel's Flash Cartridge	VII 2	9	A.S.P.
Nobel's No. 48	III 2	4	M S B
Nobel's No 49	III 2	4	M S B

(*b*) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Plastic Initiator for Smoke Generators	VI 2	6	O.A.S.
Plastic 808	III 1	2	M S B.
Plastrite	III 1	2	M.S B.
Polar Ajax " S "	III 1	2	M.S.B.
Polar Ajax " C " (S)	III 1	2	M.S.B.
Polar Ammon Gelatine Dynamite	III 1	2	M.S.B.
Polar Ammon Gelignite	III 1	2	M S.B.
Polar A.N. Gelatine Dynamite	III 1	2	M.S.B.
Polar A.N. Gelignite	III 1	2	M.S.B.
Polar A.2 Monobel " S "	III 1	2	M.S.B.
Polar A 3 Monobel " S "	III 1	2	M.S.B.
Polar Blasting Gelatine	III 1	2	M.S.B.
Polar Blasting Gelatine (P)	III 1	2	M.S B.
Polar Blasting Gelatine, Type 1, 92% N.G.	III 1	2	M S B.
Polar Blasting Gelatine, Type 2, 82% N.G.	III 1	2	M S B
Polar Gelatine	III 1	2	M S B.
Polar Gelatine Dynamite	III 1	2	M.S.B
Polar Gelignite No. 2	III 1	2	M S B
Polar Geobel	III 1	2	M.S.B
Polar Geobel No. 2	III 1	2	M.S B.
Polar Geobel No. 3	III 1	2	M.S.B
Polar N.S. Gelatine Dynamite	III 1	2	M.S B
Polar N.S. Gelignite	III 1	2	M S B
Polar N.S. Gelignite No. 2	III 1	2	M S B
Polar Rockite	III 1	2	M.S.B.
Polar S.N. Gelatine Dynamite	III 1	2	M S B.
Polar S.N. Gelignite	III 1	2	M S B.
Polar Viking " S "	III 1	2	M.S.B.
* Potassium Di-nitro-phenate	III 2	1	M S L.
Practice Electron Bombs	VI 2	11	O.A.S.(D)
(*b*) Premier Powder	III 2	2	M S.B.
Pressed Rocket Charges No. 1	VI 2	3	M.S B
Pressed Rocket Charges No. 2	VI 2	6	O.A.S.
Pressed Rocket Motors No. 1	VI 2	6 (boxed) 8 (loose)	O.A.S.
Pressed Rocket Motors No. 2	VI 2	6	O.A.S.
Primed Cambric	VI 2	6	O.A.S.
Puffer Capsules, R.H. No. 1	VI 2	6	O.A S.
Q.F. Ammunition	VI 3	6	O.A S
Quarry Antislak	III 1	2	M S B.
Quarry Gelammonite	III 1	2	M S B.
Quarry Monobel	III 1	2	M S B.
Quarry Plastex	III 1	2	M S B.
Quickmatch	VI 2	1	O.A.S
Railway Fog Signals, O. in C. No. 1	VI 1	6	O.A.S (C)ø
R D 1031	III 2	4	M.S.B
R.D. Composition 202	II	1	M.S.A.

* Containing 33⅓ per cent. of water, calculated on the wet material is non-explosive.

(*b*) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section I)
RDX — BWX	III 2	4	M.S.B.
RDX — TNT	III 2	4	M.S.B.
Reconnaissance Flares	VII 2	9	A.S.P.
16 oz. Regulation Distress Rocket	VII 2	9	A.S.P.
Relay Detonators	VI 3	10	M.S.O.
(*b*) Remington Smokeless Powder	III 2	2	M.S.B.
Rex Burrowite	III 2	4	M.S.B.
Rifle Signal Grenades	VII 2	9	A.S.P.
Rocket Motor Charges	VII 2	6	O.A.S.
Rockets 3·5 in. H.E. Anti-Tank Practice	VI 2	8	O.A.S. (C)
Rockite	III 1	2	M.S.B.
Rokitol	III 1	2	M.S.B.
Rokrifi Powder	III 1	2	M.S.B.
Sabulite No. I (A)	III 2	4	M.S.B.
Sabulite No. I (A) (Modified)	III 2	4	M.S.B.
Safety Cartridges	VI 1	6	O.A.S.(C)ø
Safety Cartridge Cases (Empty), Capped	VI 1	6	O.A.S.(C)ø
Safety Electric Fuzes	VI 1	6	O.A.S.(C)ø
Safety Electric Primers	VI 1	6	O.A.S.(C)ø
Safety Firing Tubes No. I	VI 1	6	O.A.S.(C)ø
Safety Fuze O. in C. No. I	VI 1	6	O.A.S.(C)ø
Safety Instantaneous Fuze	VI 1	6	O.A.S.(C)ø
Samsonite No. 3	III 1	2	M.S.B.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

ø May also be O.A.S. (O) subject to paragraph 8 on pages 7 and 8.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section I)
Saxonite "S"	III 1	2	M.S.B.
(*b*) S.B. Casting Powder	III 2	2	M.S.B.
(*b*) S.B.C. Casting Powder	III 2	2	M.S.B.
(*a*) Schermer Cattle Killer Cartridges	VI 1	6	O.A.S.(C)ø
(*b*) Schultze Gunpowder	III 2	2	M.S.B.
Seismex	III 2	4	M.S.B.
Seismex Primer	III 2	4	M.S.B.
Seismic Electric Detonators	VI 3	10	M.S.O.
Shaped Charges	VI 2	4	M.S.B.
Sheathed Cordtex	VI 2	I	O.A.S.
Ships' Line Throwing Rockets	VII 2	9	A.S.P.
Ships' Parachute Signal Rockets	VII 2	9	A.S.P.
Short Delay Detonators	VI 3	10	M.S.O.
Signal Grenades (Naval)	VII 2	9	A.S.P.
Signal, Multi-Star	VII 2	9	A.S.P.
Silver Picrate	III 2	1	M.S.L.
Simex	III 1	2	M.S.B.
Simex No. 3 "S"	III 1	2	M.S.B.
Simulators M.F. A/B No. I	VI 3	10	M.S.D.
Simulators M.G. A/B No. I	VI 3	10	M.S.O.
Simulators R.F. A/B No. I	VI 3	10	M.S.O.
Slow Burning Primers	VI 3	6	O.A.S.
S.M. and A. Cartridges	VI 3	6	O.A.S.

(*b*) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

(*a*) These explosives are only authorised for transport when packed in a particular manner.

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
(a) Small Calibre Tracer Bullets	VI 1	6	O.A S.ø
Smoke Bombs	VI 3	11	O A S (D)
Smoke Float Igniters	VI 3	9	A S P
Smoke Generators	VI 3	11	O.A S (D)
Smoke Grenades	VI 3	11	O A S (D)
Smoke Signals	VI 3	11	O.A S (D)
(b) Smokeless Diamond	III 2	2	M.S B.
(b) Smokeless Diamond Powder No 2	III 2	2	M S B.
(b) Smokeless Powder Greenbat	III 2	2	M S B.
S.N. Gelatine Dynamite	III 1	2	M S.B.
S.N. Gelignite	III 1	2	M.S.B.
Snaps for Bon-bon Crackers	VII 2	9	A.S P
Socket Distress Signals	VII 2	9	A.S P.
Socket Light Signals	VII 2	9	A.S P.
Socket Sound Signals	VII 2	9	A S P
Socket Sound and Smoke Signals	VII 2	9	A S P
Sodium Picrate	III 2	1	M S L
Sound Signal Rockets	VII 2	9	A.S.P.
Special Gelatine	III 1	2	M S B
Special Gelatine (A)	III 1	2	M S B
Special Gelignite 62 per cent	III 1	2	M.S B
Special Opencast Gelignite	III 1	2	M S B
Special Safety Fuze	VI 1	6	O A S (C)ø

(a) These explosives are only authorised for transport when packed in a particular manner
ø May also be O.A.S (D) subject to paragraph 8 on pages 7 and 8.
(b) This explosive becomes Group I with stowage conditions M S A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
(b) Sporting Ballistite	III 1	2	M S B.
S.R.C. 2	II	1	M S.A.
Star Shells	VII 2	9	A.S P.
Steam Generators	VII 2	9	A.S.P.
Stonobel "S"	III 1	2	M.S.B.
Stooks	VI 2	7	O.A S
Sub-calibre Cendite Cartridges	VI 3	11	O.A S (D)
Submarine Blasting Gelatine	III 1	2	M.S B.
Sunderite	III 2	4	M S.B.
Super Ajax	III 1	2	M S B
Super Ammodyne	III 1	2	M.S.B.
Swiftram Powder	II	1	M S.A
Switch, Time-Pencil	VI 3	6	O.A.S.
Tetra-nitro-aniline	III 2	1	M S A.
Tetra-nitro-methyl-aniline ("Tetryl")	III 2	1	M S.A.
* Tetrazene	V 2	10	M.S.D
Thameite No 1	III 2	4	M S B.
Thameite Grain No 1	III 2	4	M S.B.
Thameite No. 2	III 2	4	M S.B
Thameite Grain No 2	III 2	4	M S B.
Thameite No 3	III 2	4	M S B.
Thameite Grain No 3	III 2	4	M S B
Thameite No 4	III 2	4	M S.B

(b) This explosive becomes Group I with stowage conditions M.S.A if it is not packed in an airtight metallic container (luting sealed containers are excluded)
* This explosive is only authorised for transport when wetted with water and packed in accordance with Statutory Instrument No 798 (1949)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Thameite Grain No. 4	III 2	4	M.S B.
Thameite No. 5	III 2	4	M.S B.
Thameite Grain No. 5	III 2	4	M.S B.
Thameite No. 6	III 2	4	M.S.B
Thameite Grain No. 6	III 2	4	M.S.B.
Thermite Igniters	VII 2	9	A.S.P.
Throwdowns	VII 2	9	A.S.P
16 oz. Thunderflash Rockets	VII 2	9	A S P.
Tolumite No. 1	III 2	4	M.S B.
(*b*) Tonite or Cotton Powder No. 1	III 2	2	M.S.B.
(*b*) Tonite or Cotton Powder No. 2	III 2	2	M S.B.
(*b*) Tonite No. 3	III 2	2	M S.B.
Torpex	III 2	4	M S.B.
(*a*) Toy Balloons	VII 2	9	A.S.P.
Tracer and Igniter Shell No. 10	VII 2	9	A S P.
Tracer Bullets	VII 2	9	A S P.
Tracers (1st, 2nd, 3rd and 4th Definitions)	VII 2	9	A S P.
Tracer Shells	VII 2	9	A S P.
Trinite No. 1	III 2	4	M.S.B.
Trinite " W "	III 2	4	M.S.B
† Tri-nitro-resorcinol (Styphnic acid)	III 2	1	M S.L.
Tri-nitro-toluene (" T.N.T.")	III 2	4	M.S B.

(*b*) This explosive becomes Group I with stowage conditions M S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded)

(*a*) These explosives are only authorised for transport when packed in a particular manner

† Must be wetted with not less than 20 per cent. of water, calculated on the wet material.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Trip Fuzes	VI 1	6	O.A.S (C)ø
Tubes for Firing Explosives	VI 2 & 3	6	O.A.S.
Tubes, Tracers for Q.F. Ammunition	VI 1	9	A.S.P.
Turbo-Starter Primers, Electrically Fired, 15 grain	VI 1	6	O.A.S.(C)ø
Unibel	III 1	2	M S.B.
Unifrax	III 1	2	M S B.
Unigel	III 1	2	M.S.B.
Unigex	III 1	2	M.S.B.
Unikol	III 1	2	M.S.B.
Unirend	III 2	4	M.S B
Unisax	III 1	2	M.S.B.
Very Signal Cartridges	VII 2	9	A.S P.
Vesta Fuzeheads	VI 2	6	O.A.S
(*a*) Vickers' Percussion Caps	VI 1	6	O.A.S (C)ø
Victor Powder M	III 1	2	M.S.B.
Viscorrin	III 1	2	M.S.A.
Vistex Nos. 1, 2, 3 and 4	III 2	4	M S.B.
Vulcan Patent Electric Delay Action Fuzes	VI 1	6	O.A.S.(C)ø
Wet Guncotton (see Guncotton)	III 2	4	M.S.B.
Wind Direction Smoke Bombs	VI 3	11	O.A.S.(D)
Winrox	III 1	2	M.S B.
XL-Hawkite " S "	III 2	4	M S.B.

ø May also be O.A.S. (D) subject to paragraph 8 on pages 7 and 8.

(*a*) These explosives are only authorised for transport when packed in a particular manner.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B.S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb per square inch)	Filling Ratio	Working (Gauge) Pressure (lb per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CHLORINE	Non-inflammable. Poisonous. Pungent odour and greenish-yellow colour gives warning of dangerous quantities in air. Injurious to membranes and tissues. May cause combustion of acetylene, turpentine and finely divided organic material. Heavier than air.	(1) Cylinders.	B.S. 401	1·25	174	1·19	283	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion. Not to be stowed with consignments of sodium, potassium, phosphorous, copper leaf, powdered metals, turpentine, ammonia, or sal-ammoniac, nor with coal gas, hydrogen, methane or acetylene.	(1) Not allowed.	3	C.
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·25		1·19		(2) As for cylinders. Not more than 50 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56).	(2) do	do.	C.
CHLORODIFLUOROMETHANE (Freon 22, Arcton 4, Monochlorodifluoromethane)	Non-inflammable. Odourless. Non poisonous. Decomposes when passed through flames, evolving hydrochloric and hydrofluoric acid fumes. Much heavier than air.	(1) Cylinders.	B.S. 401	1·00	238	0·90	380	(1) On deck adequately secured, or under deck. May be overstowed.	(1) As for cargo ships.	7	—
		(2) Large welded containers approved by the Ministry of Transport and Civil Aviation.		1·00		0·90		(2) As for cylinders. No limit.	(2) do.	do	—
CHLOROTRIFLUOROMETHANE (Freon 13, Trifluorochloromethane)	Non-inflammable, non-poisonous.	Cylinders.	B.S. 401	0·95	1980	0·90	1980	On or under deck. May be overstowed.	do.	7	—
CYANOGEN	Inflammable. Highly poisonous. Pungent odour. Colourless. Soluble in water. Heavier than air.	do.	B.S. 401	0·75	134	0·72	230	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	Not allowed.	3	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CYCLOPROPANE	Inflammable. Explosive with about 2% to 10% in air. Anæsthetic. Heavier than air	Cylinders	B.S. 401	0·51	171	0·48	272	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	As for cargo ships	3	A3.
DICHLORODIFLUOROMETHANE (Freon 12, Arcton 6)	Non-inflammable. Odourless. Non-poisonous. Decomposes when passed through flames evolving hydrochloric and hydrofluoric acid fumes. Heavier than air	(1) do. (2) Large welded containers, approved by the Ministry of Transport and Civil Aviation	B.S. 401	1·18 1·18	141	1·08 1·08	230	(1) On or under deck. May be overstowed. (2) As for cylinders.	(1) do. (2) do.	7 do.	— —
DIMETHYL ETHER	Inflammable. Explosive with about 2% to 50% in air. Anæsthetic. Heavier than air	Cylinders.	B.S. 401	0·59	131	0·56	220	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed.	3	A3.
DIMETHYLAMINE	Inflammable. Slightly heavier than air	do.	B.S. 401	0·59	43	0·44	88	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	do.	3	A3.
ETHANE	Inflammable. Odourless. Explosive with about 3% to 12% in air. Approximately the same density as air.	Cylinders	B.S. 401	0·36	1980	0·32	1980	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	As for cargo ships	3	A3.

(3) DISSOLVED GASES

Name of Gas (1)	Characteristic Properties (2)	Packing (3)	Maximum Working Pressure (lb. per square inch at 60° F (15 5° C.)) (4)	B S Specification Number (5)	Stowage			Recommended Label or Stencil (9)
					Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (6)	Other Passenger Ships (7)	Restrictions on stowage in relation to explosives (see p. 53) (8)	
ACETYLENE	Inflammable. Violently explosive over a wide range of mixtures in air (3% to 75% for pure acetylene). Anaesthetic. Lighter than air.	(1) Steel cylinders, approved by the Administration, containing an approved homogeneous porous mass and with acetone or other solvent.	225	B S. 401 For special conditions as to cylinders for Acetylene, see Sub-Section A of this Section	(1) On deck adequately secured, under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), corrosive and inflammable liquids, readily combustible solids and strong supporters of combustion.	(1) Not allowed.	3	A3.
		(2) Steel cylinders with welded ends, approved by the Administration, and containing an approved homogeneous porous mass with acetone or other solvent.	150		(2) As for (1).	(2) do	3	A.3.
		(3) Cylinders approved by the Administration and containing an approved porous mass without solvent. (For special and experimental purposes.)	150		(3) As for (1)	(3) do.	3	A.3.

(Category (iii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Corrosive Substances

GENERAL NOTES

1. General

This Section includes substances which, if leakage occurs, may, by reason of their corrosive properties, be a source of danger to the ship, to the men handling them and to adjacent cargo.

The table which follows should be consulted in regard to the degree of hazard, which varies considerably according to the nature of the substance.

Certain of the substances evolve corrosive and/or poisonous fumes, and in the event of damage to a container, care should be taken not to breathe these fumes.

2. Packing

The substances should be packed as indicated in the table

Packing material may be required :—

(i) for protective purposes only ;

(ii) for protective purposes and also for the absorption of liquid in the event of breakage ; and

(iii) in some special instances for neutralisation in the event of breakage.

In most cases the packing material may be corrugated paper, sawdust, wood wool or similar material, but in certain special cases as specified in the table, kieselguhr, whiting, whiting and sawdust or other approved substances must be used for packing purposes For example, an intimate mixture of sawdust and whiting or whiting and coarse exfoliated vermiculite as specified in the table has been approved in certain cases for use with nitric acid and chromic acid solution.

All packages must conform to the general principles set out in the General Recommendations (pages 5 and 6). Where "effective absorbent material" is specified it must comply with the definition of "effective" on page 6, and in addition, when two or more containers of a diameter exceeding 3½ inches (90 mm.) are packed in a case, the case must contain an internal partition or partitions, with the object of maintaining the position of each such container in relation to each other such container in the case.

Adequate air space must be left in the containers for thermal expansion as set out in the table.

Where no weight or capacity limit is specified there is no restriction on the weight or capacity of packages.

3. Stowage

Detailed stowage precautions are shown in the table. Where the stowage regulations provide that a substance is to be carried on deck only, or is prohibited in passenger ships it is nevertheless permissible to ship that substance on or under deck and/or in passenger ships when it is in compliance with Section 9, applicable to laboratory chemicals and/or medicinal preparations in limited quantities.

4. Empty Containers

Empty containers which have lately been used for the carriage of some corrosive substances are liable to present a hazard, and attention should be paid to the hazard attached to the corrosive substance last carried. In the case of certain substances additional hazard may arise due to the reaction of water or air with any residual material. The shipper must declare the substance last carried unless the containers are clean and dry.

Care should be taken to see that all such empty containers are effectively closed.

5. This section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities.

TABLE OF CORROSIVE SUBSTANCES

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions in stowage in relation to explosives (see p. 53) (10)	
Acetic Acid Aqueous Solution 80% to 90% w/w (Vinegar Acid).	Liquid with pungent odour. Corrodes lead and certain other metals. Combustible. Fl pt. about 110° F depending on concentration of aqueous solution.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	D.
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed.	10%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container.	—	(2) do.	(2) do.	do	D.
		(3) Glass or earthenware containers of suitable make, effectively closed.	10%	15 gal.	(3) Packed singly in :— (a) wicker hampers with wicker bonnets ; or	—	(3) do.	(3) do.	do.	D.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
ACETIC ACID Aqueous Solution 90% to 90% w/w (Vinegar Acid) (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material					
		(4) Suitable stainless steel, aluminium-lined iron, aluminium-lined steel, or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed.	10%	100 gal.	(4) —	—	(4) On or under deck.	(4) As for cargo ships.	7	D
		(5) Suitable wooden barrels, effectively closed	10%	50 gal	(5) —	—	(5) do.	(5) do	do.	D
		(6) Large containers approved by Ministry of Transport and Civil Aviation.	—	—	(6) —	—	(6) do.	(6) do	do.	D
ACETIC ACID GLACIAL and over 90% w/w.	Liquid at 60° F. with pungent irritating odour. Ice-like solid below 60°F. Soluble in water. Corrosive to lead and certain other metals. Inflammable. Fl. pt. about 110° F. Irritant to skin and mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do.	6	D
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed.	10%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container	—	(2) do	(2) do	do	D
		(3) Glass or earthenware containers of suitable make, effectively closed	10%	15 gal.	(3) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*d*) wooden cases with suitable protective material.	—	(3) do.	(3) do.	do.	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
ACETIC ACID GLACIAL and over 90% w/w (*Contd.*)		(4) Suitable stainless steel, aluminium-lined iron, aluminium-lined steel, or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed	10%	100 gal.	(4) —	—	(4) On or under deck	(4) As for cargo ships.	6	D
		(5) Suitable wooden barrels, lined or coated internally with wax or other suitable material, effectively closed	10%	50 gal.	(5) —	—	(5) do	(5) do	do.	D
		(6) Large containers approved by Ministry of Transport and Civil Aviation	—	—	(6) —	—	(6) do	(6) do.	do	D
ACETIC ANHYDRIDE (Acetic Oxide or Acetyl Oxide)	Liquid. Pungent odour. Decomposes in water, forming acetic acid. Combustible. Fl. pt. about 130° F. Irritant to skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed	7½%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On or under deck. Not in contact with strong supporters of combustion or strong acids	(1) do.	do	D
		(2) Glass or earthenware containers of individual capacity not exceeding 6 gal., of suitable make effectively closed	7½%	6 gal.	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container	—	(2) do	(2) do	do	D
		(3) Glass or earthenware containers of suitable make, effectively closed	7½%	15 gal.	(3) Packed singly in:— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.	—	(3) do	(3) do	do	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	
ACETIC ANHYDRIDE (Acetic Oxide or Acetyl Oxide) (*Contd.*)		(4) Suitable stainless steel, aluminium - lined iron, aluminium - lined steel or aluminium drums strengthened by rolling hoops or protected by a steel cage, effectively closed	7½%	100 gal.	(4) —	—	(4) On or under deck. Not in contact with strong supporters of combustion or strong acids	(4) As for cargo ships.	6	D.
ACID BUTYL PHOSPHATE (Butyl Phosphoric Acid).	Viscous liquid at 68° F (20° C.) Mildly corrosive to steel.	PACKING, STOWAGE AND LABELLING AS FOR PHOSPHORIC ACID (page 92)								
ALUMINIUM CHLORIDE ANHYDROUS (The solution or hydrated form is non-dangerous)	Solid. Reacts vigorously with water, forming hydrochloric acid. Corrosive to most metals in the presence of moisture.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	7 lb.	(1) Packed with suitable protective material in wooden cases. Not more than 28 lb per case.	—	(1) On deck only. Away from acids.	(1) do.	None.	D.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	3 cwt.	(2) —	—	(2) do.	(2) do.	do.	D.
AMMONIUM COMPOUNDS other than those listed in these recommendations.	Not dangerous but should be away from chlorates and strong alkalis, e g. lime, limewash, caustic soda, etc.								6	—
AMMONIUM HYDROGEN FLUORIDE (Ammonium Bifluoride).	Solid. Becomes corrosive in the presence of moist air	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Should not be in contact with chlorates or strong alkalis, e g lime, limewash, caustic soda, etc.	(1) As for cargo ships.	do	—
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
FORMIC ACID	Fuming liquid with pungent irritating odour Soluble in water Corrosive to metals and caustic to the skin. Combustible.	(1) Glass, earthenware or polythene containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	D.
		(2) Glass, earthenware or polythene containers of individual capacity not exceeding 6 gal, of suitable make, effectively closed.	10%	6 gal	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container.	—	(2) do.	(2) do	do	D
		(3) Suitable polythene containers, effectively closed.	10%	7 gal.	(3) Totally enclosed singly in a tight fitting fibreboard container of suitable construction	—	(3) do.	(3) do	do.	D.
		(4) Glass, earthenware or polythene containers of suitable make, effectively closed.	10%	15 gal	(4) Packed singly in :— (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material	—	(4) do.	(4) do	do	D
		(5) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or other suitable material, effectively closed	10%	100 gal	(5) —	—	(5) do.	(5) do	do.	D.
		(6) Suitable unlined stainless steel drums, effectively closed	10%	100 gal.	(6) —	—	(6) do	(6) do.	do.	D
HYDRAZINE COMPOUNDS (other than those specifically mentioned)	—	Shipments of hydrazine compounds other than those specifically mentioned (except where made under the provisions of Section 9) must be referred to the Ministry of Transport and Civil Aviation.								
HYDRAZINE HYDRATE	Corrosive fuming liquid. Strong chemical reducing agent. Explosive and toxic vapour. Caustic to the skin and eyes vapour irritant to mucous membranes and eyes.	(1) Glass or polythene bottles of suitable make, effectively closed	5%	5 pints	(1) Packed with suitable protective material in wooden cases Not more than 6 gal. in each case.	—	(1) On deck only. Away from strong acids and strong supporters of combustion.	(1) Not allowed.	3	D.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDRAZINE HYDRATE (*Contd.*)		(2) Glass stoppered glass containers or polythene stoppered polythene containers of suitable make, effectively closed	5% to be filled with Nitrogen	10 gal	(2) Packed singly in wooden cases with suitable protective material	—	(2) On deck only. Away from strong acids and strong supporters of combustion	(2) Not allowed	3	D
		(3) Aluminium containers (not less than 99.5% aluminium) of suitable make, tested by hydraulic pressure to 50 lb per square inch, effectively closed	5% to be filled with Nitrogen.	50 gal	(3) —	—	(3) do.	(3) do	do	D.
		(4) Suitable stainless steel drums tested by hydraulic pressure to 50 lb. per square inch effectively closed	5% to be filled with Nitrogen	50 gal	(4) —	—	(4) do	(4) do.	do.	D.
		(5) Suitable polythene containers of not less than 1/16 in. thickness, effectively closed	5% to be filled with Nitrogen	45 gal	(5) Packed singly and tightly in a suitable steel drum not thinner than 18 B.G. (0.0496 in.), with securely-fastened lid.	—	(5) do.	(5) do	do	D
HYDRAZINE HYDROBROMIDE, HYDRAZINE HYDROCHLORIDE, HYDRAZINE SULPHATE	Solid. Toxic. React with strong solutions of caustic alkali to form hydrazine hydrate, a fuming liquid with an explosive and toxic vapour. React violently with liquid oxidising agents.	May be regarded as non-hazardous provided they are packed in suitable containers and stowed away from caustic alkalis and strong oxidising agents								
HYDRIODIC ACID (Hydrogen Iodide Solution)	Liquid. Fumes in air. Consists of a solution of hydrogen iodide which is a gas at ordinary temperatures. Corrosive to iron and steel and certain other metals, irritant to the skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only. Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed	None	D.
		(2) do.	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*c*) wooden cases with suitable protective material	—	(2) do	(2) do	do	D.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDROBROMIC ACID (Hydrogen Bromide Solution)	Liquid, fuming in air. Consisting of a solution of hydrogen bromide which is a gas at ordinary temperatures. Very corrosive to iron and steel and certain other metals. Irritant to the skin and mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only. Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed.	None.	D.
		(2) do.	10%	10 gal	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) strong iron hampers with iron bonnets with not less than ¼ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (c) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOSPHORUS TRIBROMIDE (Phosphorus Bromide)	Fuming liquid. Penetrating odour. With water decomposes with evolution of heat and formation of Hydrobromic and Phosphorus Acids. Corrosive to iron and steel. Irritant to the mucous membranes. Intense reaction with strong alkalis may cause fire.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On deck only	(1) Not allowed.	4	D
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do	(2) do.	do	D.
		(3) Glass or earthenware containers of suitable make, effectively closed.	10%	11 gal	(3) Packed singly with effective inorganic absorbent material in a strong wooden case. The neck of the container shall be adequately protected by a fitted solid hood bolted down to give a total enclosure	—	(3) do	(3) do.	do	D
PHOSPHORUS TRICHLORIDE (Phosphorus Chloride).	Fuming liquid with a pungent odour. With water forms Hydrochloric Acid and Phosphorous Acid. Corrosive to iron and steel. Reacts with organic matter with intense heat. Irritant to the mucous membranes	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) do.	(1) do.	do	D.
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do.	(2) do.	do	D
		(3) **For Anhydrous Phosphorus Trichloride only** Suitable unlined metal drums (e.g. steel) of not less than 16 gauge (0·0625 in.) body and 14 gauge (0·0785 in.) ends, effectively closed	10%	50 gal.	(3) —	—	(3) do	(3) do.	do	D.
PHOSPHORYL CHLORIDE (Phosphorus Oxychloride)	Fuming liquid with a pungent odour. Decomposes with water forming Hydrochloric and Phosphoric Acids, corrosive to iron and steel and certain other metals. In contact with organic matter produces intense heat and may cause fire. Irritant to the mucous membranes. Supports combustion and may promote ignition.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective inorganic absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) do	(1) do.	do	D.
		(2) Suitable nickel drums or suitable steel drums lined or coated internally with lead, effectively closed.	10%	—	(2) —	—	(2) do	(2) do.	do	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POTASSIUM HYDROGEN SULPHATE (Acid Potassium Sulphate, Potassium Bisulphate)	Crystalline substance Soluble in water giving an acid reaction. Solution is corrosive to iron and steel.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck	(1) As for cargo ships	7	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases Not more than 1 cwt. in each case.	—	(3) do	(3) do	do	—
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do	do	—
		(5) Suitable barrels or cases of wood, effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	—
POTASSIUM HYDROXIDE SOLUTION (Potassium Hydrate, Potassium Hydroxide Liquid, Caustic Potash, Potash Liquor)	Liquid. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On or under deck. Not in contact with ammonium compounds, aluminium, zinc and alloys thereof	(1) do	6	D.
		(2) do.	5%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or	—	(2) do	(2) do	do	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Mum or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 33) (10)	
SODIUM HYDROGEN SULPHATE (Sodium Sulphate Acid, Nitre Cake, Sodium Bisulphate) containing more than 3% free acid	Solid. Corrosive when wet. May contain small amounts of sulphuric acid.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck.	(1) As for cargo ships.	7	—
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do	—
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases Not more than 1 cwt. in each case.	—	(3) do	(3) do.	do.	—
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do	do.	—
		(5) Suitable metal drums (e.g steel), effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do	—
		(6) Suitable barrels or cases of wood, effectively closed.	—	—	(6) —	—	(6) do	(6) do	do.	—
		(7) Fibreboard containers approved by Ministry of Transport and Civil Aviation with an inner polythene bag	—	1 cwt.	(7) —	—	(7) do	(7) do	do	—
Note—Sodium sulphate, glauber salts and commercial saltcake, neutral or containing not more than 3% free acid, are non-dangerous and may be carried without restriction.										
SODIUM HYDROGEN SULPHITE SOLUTION (Sodium Bisulphite Solution).	Corrosive, with a pungent odour	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On or under deck. Away from acids.	(1) As for cargo ships.	6	D
		(2) do	10%	15 gal.	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do	(2) do	do	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance to Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM HYDROGEN SULPHITE SOLUTION (Sodium Bisulphite Solution) (Contd.)					(c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (d) wooden cases with suitable protective material.					
		(3) Suitable wooden barrels, effectively closed.	—	—	(3) —	—	(3) On or under deck. Away from acids.	(3) As for cargo ships.	6	D
SODIUM HYDROXIDE (Solid) (Sodium Hydrate, Caustic Soda).	Solid. Generates heat in contact with water. Very soluble in water. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Not in contact with ammonium compounds, aluminium, zinc or alloys thereof	(1) do	7	—
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do	(3) do.	do	—
		(4) Tins or cans of suitable make, effectively closed.	—	2 lb	(4) Packed in strong fibreboard containers. Not more than 56 lb per container	—	(4) do	(4) do.	do	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do	(5) do	do	—
SODIUM HYDROXIDE (Solution) (Caustic Soda Liquor, Sodium Hydrate, Lye)	Liquid. Strongly caustic to the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	5%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do	6	D
		(2) do	5%	15 gal	(2) Packed singly in — (a) wicker hampers with wicker bonnets; or	—	(2) do	(2) do	do	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	(11)
MERCURIC NITRATE, MERCUROUS NITRATE (see also Section 7, Strong Supporters of Combustion).	Crystals or powder which become liquid by absorbing moisture from the air Strong oxidising agent Dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets , or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container , or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material , the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) do	(3) do	do.	—
		(4) Suitable metal drums (e.g steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do.	—
MERCURY COMPOUNDS excluding Mercurous Chloride, which is not poisonous, and those mentioned above ; including the following :— *Note* Where reference is made to a compound of mercury, it includes mercurous and mercuric. MERCURY ACETATE, MERCURY-AMMONIUM CHLORIDE, (contd.)	These are mostly in the form of crystals or powders and are dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases If liquid, not more than 10 gal in each case	—	(1) do	(1) do	do	—
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets , or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container , or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material , the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do	(2) do	do	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 5)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MERCURY COMPOUNDS *(contd.)* MERCURY BENZOATE, MERCURY BISULPHATE, MERCURY BROMIDE, MERCURY GLUCONATE, MERCURY IODIDE, MERCURY NUCLEATE (Mercurol), MERCURY OLEATE, MERCURY OXIDE, MERCURY OXYCYANIDE, MERCURY POTASSIUM IODIDE, MERCURY SALICYLATE, MERCURY SULPHATE, MERCURY THIOCYANATE.		(3) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck Away from food and foodstuffs.	(3) As for cargo ships.	None.	—
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed with suitable protective material in wooden cases.	—	(4) do.	(4) do.	do.	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) do	—	(5) do.	(5) do	do.	—
		For solids only. (6) Suitable polythene bags, effectively closed.	—	—	(6) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(6) do.	(6) do.	do.	—
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do	(7) do.	do.	—
		(8) Double-walled paper bags, securely closed.	—	—	(8) Tightly packed in outer cases.	—	(8) do	(8) do.	do.	—
NICOTINE, NICOTINE COMPOUNDS AND PREPARATIONS THEREOF, incl. NICOTINE HYDROCHLORIDE, and solutions thereof	Liquids or solids. The solid forms are deliquescent	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid.	2¼ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases. If liquid not more than 10 gal. in each case.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None.	C.
		(2) do	5% if liquid	2¼ gal. if liquid	(2) Packed with effective absorbent material in fibreboard containers approved by Ministry of Transport and Civil Aviation. If liquid not more than 7½ gal. in each case.	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed	5% if liquid.	—	(3) As (1) above.	—	(3) do.	(3) do.	do.	C.
		(4) do.	5% if liquid	—	(4) As (2) above.	—	(4) do	(4) do.	do.	C.
		(5) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid	100 gal. if liquid.	(5) —	—	(5) do.	(5) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties, Flash point, Miscibility with Water, etc	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
DI-ETHYL-ETHER (*Contd*)		(3) Steel drums. The drums must be tested by hydraulic pressure to at least 20 lb per square inch for temperate climates and 40 lb per square inch for tropical climates	10%	—	(3) —	7½ cwt.	(3) On deck only Total quantity not to exceed 25 tons Smoking and the use of naked lights in the vicinity of this substance must be strictly prohibited	(3) Not allowed.	As for (1)	A.1
ETHYL CHLORIDE (Chloroethane) (see also Gases Section, page 63)	Gas at ordinary temperatures. Mobile liquid below 54·5° F. (12·5° C.) or under pressure. Anaesthetic. Fl pt. below 0° F.	(1) Glass containers of suitable make, hermetically sealed	7½%	4 oz.	(1) Packed in metal-lined cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 4 gal in each case.	—	(1) On deck, or under deck in a well ventilated space.	(1) do.	3	A.1
		(2) Steel drums tested and proved free from leakage under hydraulic pressure of 100 lb. per square inch or otherwise as approved by the Administration.	Filling ratio (see Gases Section) 0·82 temperate climates; 0·79 tropical climates.	50 gal	(2) —	—	(2) On deck or under deck in a well ventilated space. Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), food or foodstuffs, corrosives and readily combustible solids and strong supporters of combustion. To be kept cool. Total quantity not to exceed 5 tons gross.	(2) do	do	A.1
ETHYL CHLOROFORMATE (ETHYL CHLOROCARBONATE)	Liquid. Poisonous and Corrosive. Fl pt variable, about 61° F. (15° C.). Immiscible with water.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	1 gal.	(1) Packed in wooden cases with suitable protective material. Not more than 6 gal in each case.	—	(1) On deck only	(1) As for Class A(I) (1).	3	A.1 & C, Fl pt below 73° F. A.2 & C. Fl pt. 73° to 150° F
		(2) do	10%	10 gal	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper ; or (*c*) Wooden cases with protective material	—	(2) do.	(2) do	do	do
		(3) Suitable polythene bottles hermetically sealed, fitted with a screw cap effectively closed	10%	10 gal	(3) Packed singly and tightly in suitable steel drums with securely fastened lids	—	(3) do	(3) do	do.	do

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties, Flash point, Miscibility with Water, etc. (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
ETHYLENE OXIDE (see also Gases Section, page 63) (Oxirane, Epoxyethane).	Gas at ordinary temperatures. Mobile liquid below 10·7° C. (51° F.) or under pressure. To prevent potential explosive polycondensation, it is necessarily rigidly to exclude acids and bases of all kinds of chlorides Water should also be excluded.	(1) Glass containers of suitable make, hermetically sealed.	Filling ratio (see Gases Section) 0·75 temperate climates; 0·72 tropical climates	3½ oz.	(1) Packed in cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 2 gal in each case.	—	(1) On or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal. Away from living quarters (see definition (8), page 5), corrosive and readily combustible solids and strong supporters of combustion. To be kept cool. Maximum quantity permitted 5 tons gross.	(1) Not allowed.	2	A.1
		(2) Steel drums tested and proved free from leakage under hydraulic pressure of 100 lb per square inch or otherwise as approved by the Ministry of Transport and Civil Aviation	do	50 gal.	(2) —	—	(2) do.	(2) do	do	A 1
MEDICINAL AND PERFUMERY PRODUCTS AND FLAVOURING ESSENCES containing alcohol and/or acetone. Fl. pt. not below 60° F. (16° C.) Does not include preparations containing nitroglycerine or any unstable or reactive compound or any inflammable solvent other than alcohol or acetone.		(1) Glass or earthenware containers of suitable make, hermetically sealed.	2½%	5 pt.	(1) Packed in wooden cases with suitable protective material such as sawdust or thick corrugated paper. Not more than 10 gal. in each case.	—	(1) No restriction	(1) No restriction	4	—
		(2) Tins or tubes of suitable material and make, hermetically sealed	2½%	5 pt	(2) Packed in strong wooden cases. Not more than 10 gal in each case	—	(2) do.	(2) do.	do	—
METHYL CHLOROFORMATE (Methyl Chlorocarbonate)	Poisonous and corrosive. Fl. pt. under 73° F. Immiscible with water	(1) Glass or earthenware containers of suitable make, effectively closed	10%	1 gal	(1) Packed in wooden cases with effective absorbent material. Not more than 6 gal in each case.	—	(1) On deck only	(1) As for Class A(I) (1).	3	A.1
		(2) do	10%	10 gal	(2) Packed singly in :— (a) wicker hampers with wicker bonnets, or	—	(2) do	(2) do.	do	A 1

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ALUMINIUM METAL OR ALLOY (Borings, chips, granules, shavings, unpolished powder). Bars, ingots or sheets are not considered dangerous.	Evolve hydrogen in contact with water. Will react readily with caustic alkalis and mineral acids evolving hydrogen. Finely divided dust, if liberated from broken packages containing powdered aluminium or alloys, is easily ignited by naked lights	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, caustic alkalis and strong supporters of combustion.	(1) As for cargo ships	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases	—	(2) do	(2) do	do	G.
		(3) Suitable paper bags	—	1 lb	(3) Packed in hermetically sealed tin-lined wooden cases.	—	(3) do	(3) do.	do	G.
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do	(4) do	do	G.
Note.—Borings, chips, granules and shavings may be packed in less stringent packings provided a sample has been tested by the Ministry of Transport and Civil Aviation.										
ALUMINIUM POWDERS, POLISHED (treated with oil or wax) for printing and paint purposes.	These powders do not evolve hydrogen when in contact with water at ordinary temperature and are not dangerous in themselves	—	—	—	—	—	Keep dry. Away from caustic alkalis and acids	do	None	—
ALUMINIUM SILICON in powder form. (Aluminium Silicon in ingot form is not considered dangerous)	In contact with water evolves hydrogen.	As for Aluminium Powder (unpolished)			—	—	—	Not allowed.	5	G.
BARIUM ALLOYS, non-pyrophoric. (For pyrophoric alloys see Section 8).	When containing a substantial proportion of barium rapidly decompose water evolving hydrogen which may ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed	—	Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	5 cwt.	(3) do	(3) do	do	G.
BARIUM METAL	Metal which tarnishes in air. Rapidly decomposes water evolving hydrogen which may ignite. Reacts violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1½ lb Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) do	5	G.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
BARIUM METAL (*contd.*)		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) Not allowed.	5	G.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	5 cwt.	(3) do.	(3) do	do.	G.
BARIUM OXIDE	Solid. Evolves heat in contact with water Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry On or under deck. Away from acids, ammonium compounds, food and foodstuffs.	(1) Under deck.	3	G.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do	G.
		(3) Suitable metal drums (e g steel), effectively closed.	—	—	—	—	(3) do	(3) do.	do.	G.
		(4) Suitable wooden barrels, effectively closed	—	—	—	—	(4) do	(4) do.	do.	G.
BOROHYDRIDES — LITHIUM BOROHYDRIDE	Microcrystalline salt like solid. Hygroscopic Liable to ignite when moistened with water or in contact with cellulosic material Evolves hydrogen in contact with water	(1) Suitable polythene lined bags, packed in tins or cans of suitable make, hermetically sealed	—	—	(1) Packed in metal containers of suitable make, hermetically sealed The space between the inner and outer containers to be packed with suitable dry inert material.	12 lb	(1) Keep dry On deck only Away from acids, alkalis and external sources of heat	Not allowed.	3	G.
		(2) Steel drums of suitable make, hermetically sealed	—	1 cwt.	(2) Overkegged by an additional steel drum. The space between the inner and outer containers to be packed with suitable dry inert material.	—	(2) do Drums to be attached to suitable release gear situated at the after end of the ship and to be immediately jettisoned in the event of fire.	do.	do.	G.
POTASSIUM BOROHYDRIDE	White crystalline powder Burns quietly in air Reacts vigorously with water at elevated temperatures or in presence of acids with evolution of hydrogen	(1) Suitable polythene lined bags, packed in tins or cans of suitable make, hermetically sealed	—	12 lb	(1) Packed in metal containers of suitable make, hermetically sealed. The space between the inner and outer containers to be packed with suitable dry inert material.	—	(1) Keep dry. On deck only. Away from acids, alkalis and external sources of heat.	Not allowed.	3	G
		(2) Steel drums of suitable make, hermetically sealed	—	1 cwt.	(2) For shipments to tropical climates, the drums should be overkegged by an additional steel drum. The space between the inner and outer containers to be packed with suitable dry inert material	—	(2) do.	do	do	G

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
BOROHYDRIDES (*Contd.*) SODIUM BOROHYDRIDE	Microcrystalline salt like powder. Burns quietly in air. Reacts slowly with water at ordinary temperatures with evolution of hydrogen. Reacts vigorously at elevated temperatures or in presence of acids with evolution of hydrogen.			AS FOR POTASSIUM BOROHYDRIDE						
CALCIUM METAL and ALLOYS (non-pyrophoric). (For pyrophoric alloys see Section 8)	Rapidly decompose water evolving hydrogen which is liable to ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	1½ lb.	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb. net per case.	—	(1) Keep dry. On or under deck. Away from acids, strong supporters of combustion and living quarters (see definition (B), page 5).	(1) Not allowed	5	G.
		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	5 cwt.	(3) do.	(3) do	do	G.
CALCIUM CARBIDE (Carbide of Calcium).	Solid. In contact with water or aqueous solutions rapidly evolves acetylene, a highly inflammable gas. Reacts vigorously with acids.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 2 cwt. per case	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry. On or under deck. Away from acids, strong supporters of combustion, copper and copper alloys, and living quarters (see definition (B), page 5)	(1) do	4	G.
		(2) Tins or cans of suitable make, effectively closed.	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) do.	do	G.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	250 lb.	(3) —	—	(3) do	(3) do	do.	G.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Stowage: Other Passenger Ships	Stowage: Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POTASSIUM METAL (*Contd.*)		composite seating material carried in the lid. The lid should be securely fastened by an efficient means.								
		(4) Fused solid in steel drums of sheet of not less than .048 inch thick, effectively closed.	—	—	(4) —	—	(4) Keep dry. Under deck. Away from acids, inflammable substances, strong supporters of combustion and living quarters (see definition(B), page 5)	(4) Not allowed.	3	G
SODIUM METAL	Metal which tarnishes in air. Reacts violently with water evolving hydrogen. Is liable to take fire when wet. Reacts with acids with great violence.	(1) Packed in mineral oil in glass or earthenware containers of suitable make, effectively closed.	2½%	1½ lb. per container	(1) Packed with suitable protective material in wooden cases. Not more than 10 lb. net per case.	—	(1) Keep dry. Under deck. Away from acids, inflammable substances, strong supporters of combustion and living quarters (see definition (B), page 5)	(1) do.	do.	G
		(2) Tins or cans of suitable make, hermetically sealed.	—	28 lb	(2) Packed with suitable protective material in wooden cases. Not more than 1 cwt. net per case	—	(2) do.	(2) do	do.	G
		(3) Steel drums subject to the following conditions. Each steel drum must be made of sheet of not less than .064 in. thick. It must be watertight and closed with an air and watertight lid. The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable composite seating material carried in the lid. The lid should be securely fastened by an efficient means.	—	—	(3) —	4 cwt.	(3) do	(3) do.	do.	G
		(4) Fused solid in steel drums of sheet of not less than .048 in. thick, effectively closed.	—	—	(4) —	—	(4) do.	(4) do.	do.	G.

Note—Lamps wrapped in metal foil or asbestos paper or other suitable flame barrier may be regarded as non-hazardous provided that each contains not more than 1½g. sodium metal and that not more than 60g. of such sodium is contained in any one outer case.

SODIUM PHOSPHIDE		AS FOR CALCIUM PHOSPHIDE (Page 159)								

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 23)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM ALLOYS Non-pyrophoric (For pyrophoric alloys see Section 8).	When containing a substantial proportion of strontium, rapidly decompose water evolving hydrogen which may ignite. React violently with acids.	(1) Glass or earthenware containers of suitable make, effectively closed	—	Not more than 2 cwt per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from living quarters (see definition (B), page 5), acids and strong supporters of combustion.	(1) As for cargo ships.	5	G.
		(2) Tins or cans of suitable make, effectively closed	—	do	(2) Packed in wooden cases.	—	(2) On or under deck as for (1)	(2) Not allowed	do.	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	do.	(3) —	5 cwt.	(3) do	(3) do	do	G
ZINC ASHES	Liable to give off dangerous gases in contact with water or damp air	(1) Tins or cans of suitable make, effectively closed.	—	—	(1) Packed in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, caustic alkalis, strong supporters of combustion and living quarters (see definition (B), page 5)	(1) As for cargo ships.	5	—
		(2) Suitable metal drums (e.g. steel), effectively closed	—	—	(2) —	—	(2) do	(2) do.	do	—
		(3) Hessian bags, effectively closed, *providing a sample of the Zinc Ashes has been submitted and found satisfactory by the Ministry of Transport and Civil Aviation*	—	—	(3) —	—	(3) do.	(3) do.	do	—
ZINC POWDER or DUST	Evolves hydrogen in contact with water, damp air or acids and may ignite.	(1) Glass or earthenware containers, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) do	4	G
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do	do	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do.	do	G

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHLORIC ACID (not exceeding 10% solution)	In strong solutions gives off chlorine and oxygen	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with effective inorganic absorbent material, such as kieselguhr or exfoliated vermiculite, in wooden cases	—	(1) On deck only Away from organic substances, combustible cargo and strong acids.	(1) Not allowed.	3	F.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	F.
CHLORITES :—	Finely divided organic or metallic substances if mixed with this material are highly inflammable and may be ignited by friction.									
CALCIUM CHLORITE, SODIUM CHLORITE	Crystals or crystalline powder. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, powdered metals and strong acids.	(1) do.	do.	F.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do.	F.
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases	—	(3) do.	(3) do	do	F.
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do	do	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CHROMIUM TRIOXIDE (Chromic Acid, Solid)	Poisonous and corrosive. When wet may cause fire in contact with combustible substances.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases The protective material may consist of kieselguhr, whiting or an intimate mixture of coarse exfoliated vermiculite and whiting consisting of 70% to 80% whiting by weight and 20% to 30% exfoliated vermiculite by weight, or other substance approved by the Ministry of Transport and Civil Aviation.	—	(1) On or under deck. Away from combustible cargo, food and foodstuffs.	(1) As for cargo ships.	4	F.
		(2) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	—	—	(2) —	—	(2) do	(2) do	do.	F.
		(3) Suitable heavy gauge steel drums, effectively closed.	—	—	(3) —	—	(3) do	(3) do.	do.	F.
NITRATES —	Will render certain substances easily inflammable									
AMMONIUM NITRATE, free from added organic matter other than of a nature and within a limit approved by the Ministry of Transport and Civil Aviation.	Crystals Soluble in water In temperatures above 400°F. rapid decomposition may occur with evolution of heat and poisonous gas. Forms an explosive mixture when mixed with certain organic materials A declaration must be furnished certifying that the substance does not contain added organic matter other than of a nature and within a limit approved by the Ministry of Transport and Civil Aviation	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable inorganic protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo and strong acids.	(1) do	3	F.
		(2) do.	—	—	(2) Packed singly in :— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable inorganic protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed in wooden cases with suitable inorganic protective material. Not more than 1 cwt. per case.	—	(3) do	(3) do	do.	F.

Note The following may be regarded as non-hazardous :—

(1) Agricultural Ammonium Nitrate containing not less than 40% inert matter such as chalk or limestone ;

(2) Ammonium Sulphate Nitrate Mixture or Compound containing equimolecular proportions of Ammonium Sulphate and Ammonium Nitrate.

(3) Mixtures containing 47·5% Ammonium Phosphate with 52·5% diatomite coated Ammonium Nitrate and 42% Ammonium Phosphate with 58% diatomite coated Ammonium Nitrate.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM NITRATE	Crystals or crystalline powder. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(1) As for cargo ships.	6	F.
		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	F.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(3) do	(3) do.	do	F.
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do.	do	F.
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do	(5) do.	do.	F.
		(6) Paper-lined wood or fibreboard casks or kegs of suitable make, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	F.
NITRITES :— POTASSIUM NITRITE, SODIUM NITRITE.	Crystals or sticks. Decompose in contact with acids, evolving fumes of oxides of nitrogen. Involved in a fire, will intensify the burning of all combustible materials.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates and cyanides.	(1) do.	5	F.
		(2) do	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or	—	(2) do	(2) do	do	F.

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
Potassium Nitrite, Sodium Nitrite (*Contd.*)					(*c*) strong iron hampers with iron bonnets with not less than ½ in. of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates and cyanides	(3) As for cargo ships.	5	F.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(4) do.	(4) do	do.	F.
		(5) Tins or cans of suitable make, effectively closed	—	—	(5) Packed in wooden cases.	—	(5) do.	(5) do.	do.	F.
		(6) Suitable metal drums (e.g. steel), effectively closed.	—	—	(6) —	—	(6) do.	(6) do	do.	F
Perborates— Sodium Perborate (except the Tetrahydrate, which is regarded as non-hazardous)	Powder	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from strong acids.	(1) do	6	—
		(2) do	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets with not less than ½ in. of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MISCHMETALL (Slabs or ingots)	Emits sparks when scratched or struck Evolves hydrogen in contact with water or moist air	(1) Tins or cans of suitable make, effectively closed	—	2 cwt.	(1) Packed in wooden cases.	—	(1) On or under deck. Not in the same hold or compartment as inflammable substances or strong supporters of combustion.	(1) As for cargo ships.	4	—
		(2) Suitable metal drums (e.g steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do	—
		(3) Suitable barrels or cases of wood, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	—
NAPHTHALENE, CRUDE OR REFINED (Creosote Salts)	Inflammable Strong tarry smell.									
(a) Melting Point below 74° C. (165° F).		(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck If on deck protected by suitable fireproof material	(1) do	6	E.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do	do	E.
		(3) Sound metal drums or hard or plywood casks of suitable make, effectively closed.	—	—	(3) —	—	(3) do	(3) do	do.	E.
(b) Melting Point 74° C. (165° F) and above, (e.g. Flake Naphthalene, Moth Balls, etc.)		(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do	do	E.
		(2) Tins or cans of suitable make, effectively closed	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do	do	E.
		(3) Sound metal drums or hard or plywood casks of suitable make, effectively closed	—	—	(3) —	—	(3) do	(3) do	do	E.
		(4) Fibreboard casks of suitable make, effectively closed.	—	2 cwt.	(4) —	—	(4) do	(4) do	do.	E
		(5) Strong closely woven bags or double hessian bags of suitable make, effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	E
		(6) Suitable (e g "Kraft") paper bags of 2, 3 or 4 ply, effectively closed.	—	—	(6) Packed in hessian outer bags.	—	(6) do	(6) do	do.	E.
		(7) Suitable (e.g. "Kraft") paper bags of 5 or 6 ply, effectively closed.	—	—	(7) —	—	(7) do.	(7) do	do.	E.
		(8) Wooden or plywood cases of suitable make, effectively closed.	—	—	(8) —	—	(8) do	(8) do	do	E.
		(9) Fibreboard cases of suitable make, effectively closed.	—	56 lb	(9) —	—	(9) do.	(9) do	do	E

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 33) (10)	
COPRA (*Contd.*)							(*f*) Smoking and the use of naked lights in holds or near open hatches should be strictly prohibited.			
COTTON, CLEAN, (DRY), including COTTON SWEEPINGS, COTTON WASTE CLEAN (DRY)	Readily combustible. In some cases fires have been attributed to sparks, cigarette ends, etc., alighting on an exposed surface. These fibres are considered not in themselves liable to spontaneous combustion. They are, however, liable to spontaneous combustion if they become impregnated with oil.	Must be securely baled.	—	—	—	—	Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils including turpentine or resin oils, should be stowed in a compartment above such oils but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage.	As for cargo ships	3	—
COTTON, CLEAN (WET OR DAMP), including COTTON WASTE, CLEAN, (WET OR DAMP)	Not in itself liable to spontaneous combustion (i.e. when not contaminated by oxidisable materials, etc.)	Must be securely baled.	—	—	—	—	Not in the same compartment as coal, inflammable substances or strong supporters of combustion. If in holds containing animal or vegetable oils including turpentine or resin oils, should be stowed in a compartment above such oils but may if necessary be stowed in a compartment below such oils if separated from them by a steel deck and hatches securely closed against leakage. *Note* In view of possible contamination by oxidisable materials in the water with which bales of cotton have been wetted, wet and dry bales of cotton should not be stowed together	As for cargo ships	3	—

Note Ministry of Transport and Civil Aviation approval must be sought for all shipments of bales of Cotton, including Cotton Waste, which have been burnt or salvaged from a fire.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THORIUM ORES AND CONCENTRATES										
(*a*) Thorium ores and physical concentrates containing 10% and over thorium oxide.	Emit electro-magnetic rays	(1) Suitable iron or steel drums, effectively closed	—	10 cwt.	—	—	(1) On or under deck. The stow must be as cubic in shape as possible. Away from food or foodstuffs packed in hermetically sealed glass or metal containers; not in, nor directly or indirectly over, a compartment containing food or foodstuffs packed in any other manner (to avoid physical contamination, not radiation). Separated by an intervening hold from one containing camera film or plate. Separated, both vertically and horizontally, from living accommodation and working space by (i) a distance of at least 10 feet; (ii) steel decks and steel bulkheads at least ¼″ thick. The compartment to be thoroughly ventilated during loading and before unloading.	(1) As for cargo ships	4	Radio-active.
(*b*) Thorium ores and physical concentrates containing up to 10% thorium oxide.		(1) do.	—	do.	—	—	(1) do.	(1) do	do.	—
		(2) Rot proofed hessian sacks lined with polythene or bitumen.	—	1 cwt.	—	—	(2) do.	(2) do	do	—
(*c*) All thorium chemical concentrates		(1) Suitable iron or steel drums, effectively closed	—	10 cwt	—	—	(1) do	(1) do	do	Radio-active.
URANIUM ORES AND CONCENTRATES.										
(*a*) Uranium ores and physical concentrates containing 1% and over uranium oxide.		(1) Suitable iron or steel drums, effectively closed.	—	10 cwt	—	—	(1) do	(1) As for cargo ships.	4	Radio-active.
(*b*) Uranium ores and physical concentrates containing up to 1% uranium oxide.		(1) do.	—	do.	—	—	(1) do.	(1) do.	do	—
(*c*) Uranium chemical concentrates.		(1) do.	—	do.	—	—	(1) do.	(1) do	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Details of General Requirements, Packing, Labelling and Stowage
RADIOACTIVE SUBSTANCES	*Characteristic Properties.*—Radiation may be harmful if not shielded.
(*a*) *Group* 1 Substances emitting gamma rays only, or gamma rays and electrically-charged corpuscular rays (alpha and beta rays), excluding Uranium and Thorium Ores and Ore Concentrates	*General Requirements* 1. Electromagnetic radiation at the surface of the package must not exceed 200 milliroentgens per hour. At a distance of one metre from the surface of the package in any direction it must not exceed 10 milliroentgens per hour. 2. In the case of liquids, friable solids, powdered substances and gaseous products (except argon, krypton, neon, helium and xenon) a package must not contain more than 2,000 millicuries of radioactive substance. There is no limit for solid non-friable substances or argon, krypton, neon, helium or xenon *Packing* The packing must be such as to prevent the emission of alpha and beta rays and to prevent any loss of the contents, even if it is severely damaged. When liquids are carried, the inner container must be surrounded by an absorbent material sufficient to take up the entire contents. There must be no appreciable radioactive contamination (*see* Note 1) of the outer surface of the package. The smallest external dimension of the package must be not less than 4 inches. *Labelling* Each package must bear a label clearly displaying the word "Radioactive". It must also be labelled to show the number of units of radiation. One unit equals one milliroentgen per hour at one metre from the surface of a package containing a substance in Group 1, or one millirem per hour at one metre from the surface of a package containing a substance in Group 2. *Stowage* On or under deck on passenger or cargo ships. Away from food and foodstuffs (to avoid physical contamination, not radiation) Segregation from undeveloped film or plate and living accommodation to be in accordance with the table opposite; the total consignment on board at any time should not exceed 400 units without prior reference to the Ministry of Transport and Civil Aviation.
a) *Group* 1—contd.	For Gaseous Products, in addition to the above stowage, the appropriate conditions contained in Section 2 of this Report should be observed. Restriction 4 (*see* page 53) on stowage in relation to explosives will apply.
(*b*) *Group* 2 Substances emitting neutrons alone or with other radiations, including fissile materials.	*General Requirements* 1. Radiation at the surface of the package must not exceed 200 millirems per hour. At a distance of one metre from the surface of the package in any direction it must not exceed 10 millirems per hour (the biological effectiveness of neutrons relative to gamma rays is taken as equal to 10). 2. Every package containing fissile material must be accompanied by a declaration that the packaging is safe for neutron inter-action. This declaration must mean that a critical assembly will not be formed when any number of safe packages of fissile material so declared are stacked together in any assembly. 3. Item 2 of the General Requirements for Group 1 substances also apply. *Packing*, *Labelling* and *Stowage* should be as for Group 1 substances.
(c) *Group* 3 Substances and instrument dials, luminous clocks and similar articles containing radioactive luminous paint emitting electrically-charged corpuscular rays (alpha and beta rays)	*General Requirements* The electro-magnetic radiation at the surface of the package must not exceed 10 milliroentgens in 24 hours. *Voyages not exceeding 24 hours in duration* No restriction provided that there is no appreciable contamination (*see* Note 1) of the surface of the package, and that the packing is such that there can be no leakage of radioactive material under normal conditions of transport. *Voyages exceeding 24 hours in duration* One package may be carried in accordance with the stowage recommendations for Group 1 substances, except that the segregation distances from living accommodation and undeveloped film or plate need not conform with the table opposite. These distances should, however, be not less than 10 feet. No label is required. More than one package may be carried in accordance with the stowage recommendations for Group 1 substances. Each package should be regarded as equal to $\frac{1}{20}$th of a unit, and segregation distances should be calculated by reference to the table opposite. No label is required.

NOTES

(1) "*No appreciable contamination*" means : for plutonium, radium, actinium and polonium, radioactivity not exceeding 10^{-5} microcuries per square centimetre.
for other alpha emissions, radioactivity not exceeding 10^{-4} microcuries per square centimetre.
for all beta rays, radioactivity not exceeding 4×10^{-4} microcuries per square centimetre

(2) *Breakage of Containers* In the event of breakage of containers of radioactive materials the section of the vessel containing this cargo must be isolated as far as possible from danger of human contact. No one should be allowed to handle the material or to remain in the vicinity until qualified personnel are present to supervise. Great care must be exercised to prevent radioactive material from entering the body through contact, inhalation, or by any other means. The shipper and the port authority where the vessel is located or bound should be notified immediately.

(3) *Empty Packages* Unless the external surfaces of empty packages which have contained radioactive substances have no appreciable contamination (*see* Note 1), they must be shipped in accordance with this entry.

(4) *Fissile Material* means any substance containing plutonium, uranium with a uranium U235 content exceeding that in natural-occurring uranium, or Uranium U233, or any artificial fissile material.

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RECORD OF AMENDMENTS

Amendment No. 1	April, 1958
Amendment No. 2	October, 1958

(74774—1) Wt. 3300 K.32 12/58 Hw

PRINTED IN GREAT BRITAIN

~~OP. 1100 102 110~~
OP. 1100 102 020 (2)

THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

Amendment List No. 4 to the 1957 Report of the Standing Advisory Committee

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The attached pages replace the old pages which have similar numbers.

154–164—Substances Dangerous by Interaction with Water
Col. 10: Substitute " 3 " in each entry where the numerals " 4 " or " 5 " are shown.

163—Sodium Metal Lamps
1st line of Note: Substitute " 3g " for " 1½g ".

203—Cotton Seed Cut Linters, Cotton Seed Hull Fibres, Cotton Seed Pulp, Cotton Seed Shavings.
Delete the words " Pulp, Cotton Seed Shavings "

224—Nitrocellulose.
Insert " (Collodion Cotton) " after " Nitrocellulose " in Col. 1.

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235—Insert " Aerosols " after " Aeroplane Dope ", Section " 10 ", Page " 220 ".

235—Delete entries for " Arcton 4 " and " Arcton 6 "

237—Collodion Cotton: Add " (See " Nitrocellulose, wet with water ") "

237—Delete the entries for Cotton Seed Pulp and Cotton Seed Shavings

237—Dimethyl Sulphate—Substitute page " 116 " for " 115 ".

237—Insert " Expellers " after " Ethyl Sulphate ".

238—Delete entries for " Freon 12 ", " Freon 13 " and " Freon 22 ".

238—Hydrogen Peroxide—Substitute pages " 188–190 " for " 188–189 "

238—Killed Spirit—Delete page " 108 "

238—Lead Dioxide—Substitute page " 190 " for " 189 "

238—Lead Peroxide—Substitute page " 190 " for " 189 "

238—Flowers of Sulphur—Substitute page " 198 " for " 197 ".

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PART II

SECTION 1

Conveyance of Government, Visiting Forces and Commercial Explosives in Ships

(Category (i) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

SUB-SECTION A

This Section applies to the carriage of Government, Visiting Forces and Commercial explosives as cargo in merchant ships on commercial voyages.

1. Definitions

In this Section the following definitions are applicable —

An " explosive " is a substance used or manufactured with a view to produce a practical effect by explosion or a pyrotechnic effect, or any other substance which has been required by the Administration to be treated as an explosive. The term includes all items listed in sub-sections B and C of this Section

A hold is a space contained between two permanent bulkheads.

A 'tween deck space is a closed space between two consecutive continuous decks and bounded by permanent bulkheads

A shelter deck space is the space contained between the shelter and freeboard decks

A compartment is (*a*) a lower hold, or (*b*) a cargo space bounded by permanent bulkheads at each end, and having decks with closed hatchways above and below An insulated chamber, even though situated in a compartment as defined above may be considered to be a separate compartment, provided that each chamber is surrounded by a steel bulkhead. A deckhouse or a masthouse can be considered to be a separate compartment.

An explosives ship is one carrying any of the explosives mentioned in subsections B and C, other than (*a*) those explosives defined in paragraph 3, or (*b*) quantities of lachrymatory stores carried on deck and not exceeding 10 cwt. gross

A towed lighter is a single hold barge which is towed within a harbour area between a shore terminal and ship or vice versa.

A self-propelled lighter is a single hold coaster making a coastal voyage not exceeding 100 miles in length.

2. Tankers

Save in exceptional circumstances, and when no oil having a flash point lower than 150° F. is being carried, and under the special authority of the Ministry of Transport, no explosives other than those in Group 13 may be carried in oil tankers Explosives in Group 13 may be carried, provided the stowage space has been thoroughly cleansed and certified gas free, and is effectively sealed off or ventilated as specified in paragraph 25 (*h*)

3. Passenger Ships

For the purposes of this Section a passenger ship is defined as a ship carrying more than 12 passengers Except as provided below, explosives other than the following may not be carried in passenger ships —

(*a*) Explosives of Class VI, Division 1, and those defined as safety class in Group 6

(*b*) Small quantities of other explosives, excluding items in Group 10, not exceeding 20 lb. gross in the aggregate, provided suitable stowage accommodation is available See paragraph 17 (*e*).

(*c*) Small fireworks, namely, those which are not likely to explode violently and are the " Shop Goods " defined by the Home Office (Order in Council No. 16A dated 11th May, 1906, made under the Explosives Act, 1875) (See page 25)

(*d*) Ship and aircraft distress signals and apparatus not exceeding 1 ton gross

Any shop fireworks or distress signal rockets carried in passenger ships shall be stowed under the personal supervision of a responsible officer specially nominated by the Master for the purpose.

Provided that the Ministry of Transport may permit the carriage of other explosives in a passenger ship in which special approved safety measures are taken, subject to compliance in all respects with the stowage regulations.

4. Lightning Protection

In ships carrying explosives, efficient lightning conductors are to be fitted to wood masts and top masts, also to steel masts where electrical conductivity of the rigging is defective. In steel ships, steel masts must be bonded to the hull, or lightning conductors fitted.

5. Authorised Explosives

Only the following explosives may be carried —

(a) explosives authorised by the Home Office,

(*b*) explosives approved by a Government department,

(*c*) explosives of a visiting force in the U.K. which have been given a U.K. classification.

Classified lists of Government, visiting forces and commercial explosives are given in Sub-Sections B and C of this Section Throughout these Rules the term ' Government explosives " includes visiting forces explosives, the word " Group " applies to Government and visiting forces explosives, and the words " Class " and " Division " commercial explosives

6. Two or More Services

Government explosives belonging to two or more Services and comparable types of commercial explosives may be stowed together

7. Protection Against Weather

Special care must be taken during loading and unloading to prevent packages containing explosives being wetted by rain, snow, etc., as their contents may readily become unserviceable Sunlight has a deleterious effect on explosives either loose or in packages, and protective covering should be provided to prevent direct sunlight falling on the packages for any length of time

8. Security

Special measures must be taken by the Master of the ship at loading and unloading ports and also at any intermediate ports where the holds containing explosives have to be opened, to ensure the security of the explosives carried in the ship Small arms ammunition, grenades and similar small articles need particular attention to prevent pilfering, whilst bulk explosives, bombs, etc., require to be guarded against sabotage The responsibility for the security and safe handling of the consignment rests with the Master of the ship, and a responsible ship's officer must be present when the hatches are off All explosives must be tallied into and out of the ship.

9. Authorised Representative

The loading and unloading of Government explosives in ships will in all cases be conducted in the presence of an authorised representative of a service or supply department, or of a visiting force in the U.K., who will observe the manner in which the explosives are being handled and stowed, and, if necessary, will call the attention of the ship's officer responsible for the operation to any instances of improper treatment, for the purpose of avoiding damage or danger through careless or unsafe handling and stowing. The responsibility of the Master for the safe handling and stowage of the explosives is in no way affected by the presence of the Authorised Representative

10. Locking and Sealing Magazines

Magazines shall always be locked when work is suspended for any reason and when the loading has been completed When Government explosives are carried the Authorised Representative will be responsible for this duty and also for the delivery of the keys to the Master under sealed cover The Authorised Representative will also be responsible for ensuring that the construction, sealing and ventilation of special magazines or containers for Government S A S explosives is efficiently carried out In the case of commercial explosives the responsibility rests with the Master

11. Notice of Loading and Unloading of Government Explosives

The Government Shipping Agents are responsible that adequate notice of loading is given to the Service Department concerned to ensure the Authorised Representative being present before loading begins The Ship's Agents are responsible for ensuring that adequate notice of unloading is given to the Service Department concerned to ensure the Authorised Representative being present before unloading begins

Magazines containing Government explosives may not be opened before the arrival of this officer, and other Government explosives stowage should not be disturbed before he has inspected it Should exceptional circumstances make it necessary for magazines to be opened, or the stowage of other explosives broken, before his arrival, the Master must inform him and, if necessary, forward a report of the circumstances to the Owners for transmission to the Ministry of Transport

12. Marking and Sealing of Packages

Each package containing Government explosives bears a Government Explosives label, indicating the Service Department to which it belongs and the storage Group, Sub-section B The label may be replaced by a brand or stencil conveying the same information The label, brand or stencil is placed in a conspicuous position, usually on the side of the package (See Sub-section E) In addition each package has one or two Station Monogram or Inspection labels pasted over the junction of lid and body to form a seal, so fixed that it is impossible to remove the lid without breaking one of the seals. In some cases packages are sealed with metal seals bearing appropriate identification markings Packages having broken seals should be examined and should not be loaded in the ship unless the Authorised Representative is satisfied that they are safe If found correct they should be resealed, before loading, with fresh seals provided by the Authorised Representative. Loose bombs, shell, mines, etc., are not labelled

Commercial explosives must be packed and marked to comply with the conditions laid down in Sub-section C The classification markings on packages of commercial explosives will be those required by the Explosives Act, but to facilitate identification of the proper method of stowage, etc., Sub-section C includes a list of commercial explosives with the Home Office classifications and equivalent service storage groups together with the stowage code letters

13. Doubtful Explosives

Government explosives whose condition has been certified as doubtful by a Service Inspecting Officer will only be carried in ships under the authority of the Service Department concerned, and must not be stowed in a hold containing other explosives or inflammable materials.

14. Defective Packages

No leaky or badly coopered barrels or defective packages containing explosives should be received on board, and should such be offered for shipment the Master should refuse to receive them and should immediately report the circumstances to the shippers, or if Government explosives to the Authorised Representative.

15. Opening Packages

Packages containing explosives in transit must not be opened on board ship

16. Safety Precautions

(a) Artificial Lighting

When explosives are being loaded or unloaded, and when work is in progress in a hold where there are explosives, the hold shall be lighted, when necessary, by "totally enclosed" lights. When Group 15 explosives are involved the lights should be of the "flame-proof" type. If the covers on lights are of glass they must be protected by a wire mesh. Arc lights must not be used. Lights are not to be suspended over explosives when it can possibly be avoided. All fittings and flexible cables used for portable lighting will be so sited, and additional mechanical protection afforded where necessary, so as to guard against damage. Flexible cables will be of the "Tough Rubber Sheathed" type. All lighting must be examined for serviceability by a responsible ship's officer before work commences

(b) Wireless Working

Except in an emergency, wireless transmissions (R/T or W/T) from a ship loading or unloading explosives are only permitted provided the output used for transmission does not exceed 50 watts Metric wave radar transmitters are not to be used Centimetric radar transmitters are not to be used if the aerials are within 100 feet of the explosives In an emergency the use of any available communication system of this type should be an acceptable risk

(c) Bunkering

Explosives scheduled for M S A, M S B, M S D or M S L Stowage (Paragraph 22) must not be loaded or unloaded whilst bunkering with either coal or oil is in progress

Bunkering should not be carried out when working other types of explosives or whenever the hatches of the explosives stowage compartments are off, unless adequate precautions are taken to prevent coal dust or oil vapour reaching the explosives stowage space.

(*d*) *Repairs*

(i) No repair work of any kind shall be carried out in a hold of a vessel if that hold contains explosives

(ii) Repair work which involves welding, burning, riveting or any other operation creating a risk of fire shall not be carried out on board any vessel when explosives are on the vessel

(iii) Provided that any such repair work as is mentioned in sub-paragraph (ii) may be carried out if the Harbour Authority considers that circumstances of urgency make it necessary for such work to be carried out and specially authorises the carrying out of that work In that case the owner of any vessel on or to which any such work is to be carried out, or the Master of any vessel, or any other specially authorised representative of the owner of such vessel shall be responsible for ensuring that any requirements of the Bye-Laws of the Harbour relating to the carrying out of such work are observed For regulations regarding repair work on vessels containing Government explosives, see the "Conveyance in Harbours of Government Explosives and Explosives of Visiting Forces Regulations, 1956"

(*e*) *Smoking*

No person shall smoke whilst engaged in handling or moving any explosive or whilst in the vicinity of any explosive

(*f*) *Fire Fighting*

Fire fighting appliances shall be arranged on shore to the requirements of the "Notes for Guidance on Fire Fighting in Harbour Areas when Government Explosives are conveyed" and on board ship to the requirements of the Ministry of Transport, to deal promptly and adequately with fires occurring in the dock in which or on board the vessel in which the explosives are being conveyed Hoses shall be kept rigged and all other available fire fighting appliances on board such vessels and in the dock shall be kept ready for use whilst any explosives are within the harbour.

17. Position of Stowage

The position on board ship for the stowage of explosives will be selected in accordance with the following principles —

(*a*) The coolest position possible must be used.

(*b*) Explosives will normally be stowed in a lower hold or 'tween deck space, except as provided in (*c*), (*d*) and (*f*) Certain explosives are, however, permitted to be carried on deck (paragraphs 25 (*d*) and 26)

(*c*) A poop may be used, whether or not included in the gross tonnage; if not so included, the tonnage openings are to be efficiently closed. Explosives must not be stowed in a poop in which the crew are accommodated or ship's stores are carried.

(*d*) A bridge space or shelter deck space other than that abreast the engine and boiler casings may be used provided that —

(i) The space used for explosives is efficiently bulkheaded off at least 1 foot from the engine and boiler casings and from the coal bunker hatches or hatches of a hold containing coal, if any In either of these latter cases the bulkhead must be made gas tight.

(ii) Only suitable cargo is stowed in adjacent spaces

(iii) The space contains no living accommodation or ship's stores.

(iv) A shelter deck space is permitted for the stowage of S.A.S explosives under the conditions of paragraph 25 of this Sub-section

(*e*) Explosives other than those of Class VI, Division 1, small fireworks ("shop goods") or those defined as Safety Class in Group 6 must not be stowed immediately underneath living accommodation in the vertical plane and must be separated in the horizontal plane from such accommodation by a permanent watertight bulkhead.

(*f*) Insulated spaces in ships may be used for the stowage of explosives subject to the requirements of paragraph 25 concerning S A S explosives. When explosives requiring M S A Stowage (paragraph 22) are stowed in such places, all pipes and steel work are to be battened as required by paragraph 10 of Sub-section D

(*g*) Explosives classified for M S.A. or M S B Stowage may be stowed in fixed magazines erected on suitable cargo provided this is properly levelled off See Sub-section D with regard to construction of the magazine

(*h*) When Group 3 explosives marked with a double star in Column 1 of the Classified Lists of Government and Visiting Forces given in Sub-section B are stowed close to explosives belonging to Shipping Category C they must be deemed to belong to Shipping Category C whilst in the vessel Where the risk of mass explosion involved is not acceptable they should be separated from the Category C explosives by the boiler and engine room space or by an intervening hold (See Note 14 on page 21 and Note 4 on page 22B.)

(*i*) No other explosives are to be stowed in the same compartment as M.S.D or S.A.S explosives Only explosives belonging to Group 6, Safety Class (as indicated by a star in the first column of the Classified Lists given in Sub-section B) may be stowed in the same compartment as A.S.P. explosives.

18. Conditions of Stowage

The general conditions of stowage, applicable to all types of explosives, are as follows —

(*a*) The stowage space for all explosives, other than S A.S and P X.S explosives, must be dry and well ventilated, and all ventilation shafts leading into the stowage must be protected by fine mesh double gauze guards For special conditions of the stowage necessary for S.A.S and P X S explosives, see paragraphs 25 and 28

(*b*) Magazines and stowage spaces must be clean and free from grit, dust, oily waste and rubbish.

(*c*) Non-explosive cargo may be stowed in the same compartment as explosives but dangerous goods may only be stowed in a ship carrying explosives in accordance with the requirements of paragraph 33

(*d*) Ships carrying explosives should normally use sand or other inert material for ballasting If sand or other inert material cannot be obtained, colliery slag or refuse may be used but explosives should preferably not be stowed in the hold where such ballast is used.

(*e*) The magazine or stowage space must be completely closed to traffic whilst at sea.

(*f*) All explosives must be carefully handled and stowed. They must be well secured to prevent movement.

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(*g*) Unauthorised persons must not be permitted access to the spaces in which the explosives are stowed

(*h*) The overstowage (i e stowing on top of) of the following explosives is forbidden —

S.A.S. explosives belonging to Groups 11, 12 or 13 excepting shell, Q F. ammunition and mortar ammunition.

A S P explosives belonging to Group 9, Bombs, smoke, and Clusters, incendiary belong to Group 11

Cordtex belonging to Group 8 (See paragraph 23 for conditions regarding overstowage of other O.A.S explosives)

(*i*) For the purpose of self-propelled or towed lighters as defined in paragraph 1, the following conditions should be observed in the conveyance of Government and Visiting Forces explosives —

- (i) Lighters should be kept closed except during loading or unloading
- (ii) If loaded lighters are moored or anchored in a harbour area for more than 5 days (excepting when this is due to inclement weather making it unsafe to tranship the explosives) the safety distances laid down for storage in vessels must be observed This is subject to the distances between the lighters and any vessel containing Government explosives in or at a dock not being less than that required by Regulation 13 of S.I 1048 of 1956
- (iii) If the lighter can be filled with explosives of one magazine stowage class no magazines need be provided, but the vessel's sides and bulkheads must be battened if the explosives are classified for M S A. Stowage.
- (iv) If only a part of the lighter is to be used for explosives requiring M S A. Stowage the sides and bulkhead in that part must be battened as for an M S A. Stowage. Explosives normally requiring magazine stowage must be loaded last and unloaded first to avoid the possibility of other explosives being dropped on them If this is not practicable then magazines must be provided for the M.S A explosives.
- (v) If the lighter is to carry other explosives with those classified for S.A S conditions, the S A S explosives should be stowed on deck (including the hatch cover) or, if this is not practicable, they must be stowed in steel portable magazines and, following the normal rule, must not be overstowed
- (vi) If explosives classified for M S D conditions are not loaded last and unloaded first in accordance with (iv) above then they must be loaded in a portable steel magazine but the normal requirement for the magazine to be not less than 8 feet from the side of the vessel need not be observed when this is impracticable.
- (vii) Explosives classified for A S P conditions may be loaded in a lighter with other explosives subject to the general rule that they must not be overstowed

19. Passengers' Baggage and Post Office Mail

No explosives may be carried in a compartment containing passengers' baggage or Post Office Mail

20. Approval of Stowage Space for Government Explosives

The position selected by the Government Shipping Agents in conjunction with the owners for the stowage of Government explosives and the construction of any magazines required must have the approval of the Authorised Representative concerned with the consignment. The Authorised Representative is responsible that magazines and stowage places are thoroughly clean as laid down in paragraph 18 (*b*) before the loading of explosives commences

21 Types of Stowage and Code Letters

The following Table shows the types of stowage prescribed for explosives and also the code letters used in Sub-sections B and C to indicate the type of stowage required for each item.

Type of Stowage	*Code Letters*
Magazine Stowage " A "	M S A.
Magazine Stowage " B "	M S B
Magazine Stowage " D "	M S D
Ordinary Ammunition Stowage	O A S.
Pyrotechnic Stowage	A.S.P
Special Ammunition Stowage	S.A S.
Petrol Stowage Special	P.X.S.
Deck Stowage Only	D S O
Unclassified Stowage	U C.S.
Optional Deck Stowage	(D)
Above Coal Stowage, if necessary	(C)
Respirators to be provided (see paragraph 38)	(R)
Lead free Stowage conditions	(L)

22. Magazine Stowage

(*a*) There are four classes of fixed magazines used in the sea transport of explosives, viz —

M.S A , required for the stowage of explosives belonging to Group I (see the third column of the Classified List of Commercial Explosives given in Sub-section B for the Group No of commercial explosives),

M S B , required for the stowage of explosives belonging to Group 2, 3 or 4,

M S D , required for the stowage of explosives belonging to Group 10, and

S A S , required for the stowage of certain explosives belonging to Groups 11, 12 and 13 in accordance with paragraph 25 of this Sub-section.

(*b*) Portable magazines not exceeding 2½ tons measurement may be used for explosives classified for stowage under M S A , M S B or M S D conditions A suitable locker may also be used for M S D explosives

(*c*) Details of the construction of fixed and portable types of magazines are given in Sub-section D

(*d*) Collapsible steel containers of a type approved by the Ministry of Transport may also be used for M S A., M S B and M S D stowage but for M S A stowage these must be battened internally and floored in accordance with the requirements for M S A conditions in Sub-section D

(*e*) Explosives classified for M S A., M S B , or M S D stowage and requiring lead free conditions of stowage (denoted by the " (L) " in the Stowage Conditions column in the Classified Lists given in Sub-sections B and C) may be stowed in the same magazine as other explosives of the corresponding stowage class provided the " (L) " explosives are covered with a close woven linen or cotton sheet.

(*f*) M.S.B. explosives may be stowed in an M.S.A. magazine containing M.S.A. explosives provided their packages have no exposed external parts made of metals banned from M.S.A. stowage, i.e. ferrous metals and aluminium alloys containing more than one per cent. of magnesium.

(*g*) Explosives belonging to Group 6 Safety Class (as denoted by the star in the first column of the Classified Lists given in Sub-sections B and C) may be stowed in an M.S.D. magazine, container or locker with M.S.D. explosives.

(*h*) When necessary, explosives classified for O.A.S. conditions may be stowed in a magazine containing M.S.A. or M.S.B. explosives provided a close lined partition is built into the magazine to separate the O.A.S. explosives from explosives classified for magazine stowage, the partition to be of the same construction as that required in Sub-section D for the magazine and entry to the partitioned space must not be through the part of the magazine containing the explosive classified for M.S.A. or M.S.B. stowage.

23. Ordinary Ammunition Stowage. O.A.S.

Explosives requiring this type of stowage are in Groups 5, 6, 7, 7A and 8, with isolated items from other Groups, and in Class VI, Divisions 1, 2 and 3. Magazines are not required. Stowage is to be arranged in accordance with paragraphs 17, 18 and 32. These explosives may be stowed in the same compartment as M.S.A. or M.S.B. explosives (except as in paragraph 22) including those classified for lead free stowage conditions. They may be stowed with other cargo subject to the requirements of paragraph 33 concerning dangerous goods. These explosives may, if necessary, be stowed above ordinary cargo, but overstowing (stowing on top) of Government explosives requires the formal approval of the Authorised Representative and must be confined to cargo not liable to contaminate or damage the explosives. Cordtex and Aircraft bombs of the Smoke type, clustered incendiary bombs or clustered H.E. bombs must not be overstowed.

> *Note.*—Smoke Generators and Smoke Grenades (Group 11 series) should be stowed, whenever possible, in a separate compartment. If this is not possible they should be stowed only with O.A.S. explosives of Group 11.

24. Pyrotechnic Stowage. A.S.P.

Explosives requiring this type of stowage are in Group 9 and Class VII, Division 2, and are somewhat susceptible to damage in transit. They must not be overstowed (i.e. have other cargo stowed on top) or placed in the same compartment as other explosives except those in Group 6 marked as belonging to the Safety Class and those in Class VI, Division 1. Magazines are not required. The conditions of paragraphs 17, 18 and 32 apply. Pyrotechnic explosives may be conveyed as deck cargo provided they are suitably stowed in a waterproof portable container of the types A or B.

25. Special Ammunition Stowage. S.A.S.

Explosives requiring this type of stowage are in Groups 12 and 13 with a few items in Group 11; the first named may ignite spontaneously if a defect in the package permits leakage, whilst others contain chemicals which may have a toxic or fire risk should leakage occur. The items in Class VI, Division 3, marked "S.A.S." are also in this Category. Their stowage calls for great care and requires suitable provision for dealing with "leakers". The following rules must be observed:—

(*a*) Paragraphs 17, 18, 32, 37, 38 and 39, Sub-section A, apply.

(*b*) No other explosives are to be stowed in the same compartment as S.A.S. explosives.

(*c*) S.A.S. explosives of Groups 11, 12 and 13 must not be stowed in the same compartment except that containers or magazines with S.A.S. explosives of any two of these groups may be in the same 'tween deck space provided these two Groups are kept as far apart as possible subject to a minimum distance of 10 feet.

(*d*) S.A.S. explosives should preferably be stowed on deck but it may be necessary to restrict deck stowage during a period of emergency because of the danger resulting from air attack. When stowed on deck the explosive must be conveyed in steel portable containers of Types A or B (see Plate II) except in the case of lachrymatory types which, as an alternative, may be conveyed in properly sheeted portable magazines. The containers or magazines will be spaced and arranged on deck so that each is readily accessible in case of an emergency. The containers must not be stowed more than one tier high and must not be overstowed.

(*e*) When deck stowage is not used these explosives should preferably be stowed in a deep tank or in a lower hold. Magazines or portable containers are not required under these conditions except as provided in sub-paragraph (*g*). When explosives of Group 12 (other then phosphide types) are conveyed they should be stowed where they may, if necessary in an emergency, be kept thoroughly wet.

(*f*) When S.A.S. explosives cannot be stowed below deck in a deep tank or a lower hold, they may be stowed in other below deck stowage space. A 'tween deck space forward should be selected and for preference it should be the smallest and farthest from accommodation, bunker and stoke-hold, or engine room spaces. A shelter 'tween deck may only be used if the S.A.S. explosives are separated from any dangerous goods by an efficient fire stop (see Note in para. 4 of Sub-section G, page 53). Insulated spaces with steel decks may be used for the stowage of all S.A.S. explosives belonging to Groups 11 and 12 but for those belonging to Group 13 they may be used only for shell, Q.F. ammunition and mortar ammunition due to the danger of contamination.

(*g*) When stowed below and the quantity of S.A.S. explosives is not sufficiently large to occupy the greater part of the 'tween deck space, it will be necessary to use for S.A.S. explosives of types for which overstowage is banned by sub-paragraph (*j*) below a special magazine of the types described in paragraphs 32 to 45 of Sub section D which should exclude ventilators, vent shafts, electrical cables, trimming hatches and scupper pipes from its enclosed space. For Group 12 explosives of this type the magazine should be asbestos wood lined instead of the calico interlined type and wooden packages should not be permitted with these explosives. As an alternative to the special magazine the steel portable containers of Types A or B (see Plate II) as described in paragraphs 47 to 57 of Sub-section D may be used.

(*h*) All S.A.S. explosives whether in special magazines, portable containers or not (except those for which overstowage is not banned by sub-paragraph (*j*) below) should be at least 8 feet from the ship's side in order to avoid the possibility of damage resulting from collision.

(*i*) Compartments in which Group 13 explosives are stowed must have all hatch covers, ventilators, pump suctions, etc., hermetically sealed. Insulated spaces, together with their internal air ducts not necessary for cooling or ventilation, must be similarly sealed. This sealing is not required for Groups 11 or 12.

(*j*) S.A S explosives other than shell, Q F ammunition and mortar ammunition, must not be overstowed

(*k*) Fixed magazines for S.A S explosives may be erected on properly levelled suitable cargo in accordance with paragraph 17(*g*) but the floor of the magazine must not be of wood, and should be fireproof and non-absorbent.

(*l*) In accordance with paragraph 58 of Sub-section D, alternative arrangements to those set out in paragraphs [illegible] to 57 of that Sub-section for the stowage of S A S explosives may be adopted with the approval of the Ministry of Transport.

Notes.—(1) See Sub-section F for information on the markings used to indicate S.A S explosives

(2) Chemical defence preparations should be stowed in a similar manner to other items of Group 13.

26. Optional Deck Stowage. (D)

For the purposes of these Rules, " Optional Deck Stowage " means stowage on the uppermost deck in a suitable position away from steam pipes, the explosives being protected from weather and spray by tarpaulin covers and from the sun by an awning

Explosives for which this stowage is suitable are indicated by the letter (D) after the normal stowage code letters in Sub-sections B and C.

27. Deck Stowage Only. D.S.O.

Explosives requiring this type of stowage must be placed on deck in steel containers

28. Petrol Stowage Special. P.X.S.

Explosives requiring this type of stowage are in Group 15 and need the stowage conditions applicable to petrol in drums.

29. Unclassified Stowage. U C.S.

Explosives requiring this type of stowage will be dealt with in accordance with Special Instructions issued by Headquarters of the Ministry of Transport.

30. Explosives and Coal

Explosives must not be carried in a compartment containing coal, nor in a compartment directly beneath one containing coal whether there is an intervening compartment free of coal or not.

Explosives other than those marked " (C) " in column 3 of Sub-section B and column 4 of Sub-section C must not be carried in a 'tween deck compartment directly over a compartment containing coal whether there is an intervening compartment free from coal or not. In special circumstances, however, upon the authority of the Ministry of Transport Headquarters, to whom each case must be submitted, certain additional explosives may be stowed in 'tween deck compartments directly over compartments containing coal

When such compartments are used for the carriage of explosives, the explosives must be raised off the decks of the compartments by the use of battens to facilitate fire-fighting operations.

The above restrictions do not apply to coke

31 Slinging Rules for Government Explosives

(*a*) Explosives packed in boxes, except in the special instances mentioned in (*d*), (*f*), (*g*) and (*h*) should be slung in ammunition trays of approved design (e.g. see Plate III) or on scale boards fitted with efficient anti-spilling devices

(*b*) Loose shell, up to and including 7 2 inch calibre, are to be slung in ammunition trays of approved design at a jetty or dock At an anchorage they may be slung on scale boards fitted with efficient anti-spilling devices as an alternative to ammunition trays

Loose shell, above 7 2 inch calibre, are to be slung in strop slings slightly nose heavy, care being taken with capped shell to see that the sling is clear of the cap and that the cap is not loosened.

(*c*) Loose aircraft bombs, up to 1,000 lb inclusive, should be slung either with approved bomb slings (e g Plate IV) hooked into the lug on the *side* of the bomb, or alternatively, in ammunition trays of approved design or on scale boards fitted with efficient anti-spilling devices.

Loose aircraft bombs above 1,000 lb should be slung horizontally by two wire snotters in the form of a bridle

(*d*) Clustered aircraft bombs, up to 1,000 lb , packed in steel cylinders, should be slung horizontally by means of:—

(i) Approved bomb slings shackled to the holes in the joining flange of the cylinders or to the lifting rings provided on later types, or

(ii) By two wire snotters in the form of a bridle sling, the sharp edges of cylinder flanges being suitably packed with wood chafing pieces

Clustered aircraft bombs above 1,000 lb , packed in steel cylinders, should be slung horizontally by two wire snotters of adequate S W L. in the form of a bridle sling, and sharp edges of cylinder flanges should be packed with wood chafing pieces.

Clustered aircraft bombs packed in wooden roller cases should be slung horizontally by means of two snotters forming a bridle

Clustered aircraft bombs packed in rectangular wooden cases should be slung horizontally by rope sling (strops), the soundness of which must be verified regularly during the course of loading and discharging Care must be taken to maintain uppermost that side of the package which is indicated as the top by appropriate markings

Clustered aircraft bombs of the nose ejection type are to be slung in the manner described for loose aircraft bombs of the corresponding weight

Note—In all cases landing mats should be used when clustered aircraft bombs are being handled.

(*e*) Submarine mines, except ground mines without crates, are to be slung by the lifting eyes provided. Ground mines without crates are to be slung by suitable strops Special care must be taken to prevent damage to the casing

(*f*) Mine charge cases and depth charges except Mark 11 (eleven) are to be slung by their ringbolts, lifting lugs or lifting eyes of the crate holding them, as appropriate Depth charges, Mark 11 (eleven), are to be slung on ammunition trays of approved pattern or scale-boards with an efficient anti-spilling device

(*g*) Torpedo warheads should be slung by the special lifting lugs provided at the end of the package.

(*h*) Packages containing Naval B L cartridges are to be slung from their beckets using hook slings fitted with spring clips Packages containing Naval Q F cartridges may also be slung from their beckets if this is more practicable than the use of ammunition trays, *vide* 31 (*a*) Care must be taken that all beckets are used, and that no one package takes the strain of another (*i*) The use of nets *alone* for slinging explosives is prohibited.

(*j*) Containers holding bulk explosive must not be rolled during the operations of loading or unloading.

32 Methods of Stowage

Explosives will be stowed in the following manner —

(*a*) Loose shell and bombs —

1. The bottom tier should rest on two broad runners, laid athwartships and sufficiently thick to keep the grummets or lugs clear of the deck The runners should be at the points of greatest bearing, which, with shell, will be immediately in front of the driving band and at the shoulder
2. The lower tier of shell should have the grummets hard against one another, the heads being spaced to keep the axes parallel and secured with chocks or dunnage sidepieces on each side Aircraft bombs should be dealt with in a generally similar manner, care being taken to avoid damaging the lugs
3. The chocks and dunnage pieces referred to in 2 can if necessary be dispensed with for the lower tiers of shell below 8 inch calibre, and also with shell of 8 inch calibre and above when there is only one tier, and the shell in this tier are stowed alternately heads and tails with the grummets taking snugly against the shoulders of adjacent shell
4. Riding tiers of shell should be reversed, care being taken that the grummets of the riding tier are taking snugly against the shoulders of the two lower shell Aircraft bombs should be stowed similarly
5. When shell of 7·2 inch calibre and above are stowed in more than one tier, two broad runners are to be placed below each tier at the points of greatest bearing on the tiers above and below, to ensure that the driving bands are not in contact with the shoulders of shell above or below them In this arrangement each shell must be chocked off securely in a similar manner to those in the lower tier
6. Wings should be secured by wedges thoroughly driven down.
7. Holding down boards are to be used for single or broken tiers and when shell are not overstowed.
8. Adjacent piles of shell or bombs should be stowed so that they are nose to nose and base to base.
9. The number of tiers, or height of stack, must not exceed the following —

(i) Shell, all natures—

	Tiers
12 inch and over	5
Below 12 inch to 7·2 inch	8
Below 7·2 inch to 5·5 inch	11
Below 5·5 inch	15

(ii) Aircraft bombs—

Bombs, aircraft, A P Bombs, aircraft, H.E., low charge Bombs, aircraft, H.E medium charge not exceeding 1,000 lb	20 ft
Bombs, aircraft, H.E medium charge exceeding 1,000 lb Bombs, smoke Bombs, T I Clusters, H E. Clusters, incendiary	10 ft
Bombs, aircraft, H E high charge	3 tiers
Bombs, chemical	2 tiers

(ii) Aircraft bombs (*cont*)

These limiting heights of stacking are based on the assumption that the stacks are positively secured by proper stowing Bombs, aircraft, H.E., high charge must have wooden runners of at least 4 inches bearing face between tiers.

The following types of bombs will not be overstowed (i e have other cargo stowed on top) —

Bombs, chemical
Bombs, smoke
Bombs, T I.
Clusters, H.E.
Clusters, incendiary

When the other types of bombs are stacked to a height less than the maximum given above for the type, they may be overstowed provided that the overall weight on the lowest layer of bombs is not greater than that which would result from stacking the bombs to the given maximum height.

(*b*) Depth charges and mine charge cases are to be stowed fore and aft in athwartships tiers on their sides to a height not exceeding six tiers, having broad runners under the bottom tier, the pile to be blocked off similarly to shell.

(*c*) Submarine mines must not be stowed more than three tiers high.

(*d*) Barrels must invariably be stowed bilge free and be well chocked off

(*e*) Packages containing explosives are to be stowed with their longest axis horizontal, unless otherwise specified

(*f*) Boxed ammunition may normally be stacked to a height not exceeding 12 feet provided, in all cases, that a clear space of not less than 3 inches is left below the beams of the deck above

(*g*) Army pattern B L. cartridge cylinders, in skeleton cases, may be stacked horizontally to a height of 12 feet, but when skeleton cases are not fitted the height of the stacks must not exceed 5 feet

Naval pattern cartridge cylinders may be stacked horizontally up to 12 feet.

Army pattern cartridge cylinders may be stacked vertically to a height of 12 feet

(*h*) Bulk explosives must be stowed so as to leave a clear space of at least 3 inches below the beams of the deck above

33. Dangerous Goods

When dangerous goods or goods incompatible with explosives are loaded in a ship carrying explosives, these substances must be stowed in conformity with the instructions contained in Sub-section G of this Section and in the appropriate column of the Tables contained in the remaining Sections of these Rules

34. Use of Hatchways

The square of the hatchways in the 'tween decks may be used if necessary for the stowage of explosives carried in portable magazines or any O A.S.

explosives. The square of the hatchways should not normally be used for the stowage of explosives requiring magazine stowage unless the quantities are such as can be catered for by portable magazines If no other stowage is available, and upon application to the Ministry of Transport, authorisation may be given to build a magazine in this space In such circumstances the hatchways on which the explosives are stowed must be made dustproof to prevent any explosive leakage reaching the hold below

35. Electrical Fittings

In any magazine for explosives requiring M S.A , M S B or M S.D. stowage, electric cables or electrical apparatus should, if practicable, be excluded. Where this is impracticable, electric cables may be allowed, provided they are enclosed in heavy gauge screwed steel conduit or protected by an electrically continuous metal sheathing and steel wire armouring or are of the mineral-insulated metal-sheathed type, and provided also that they are separated from the explosives by an approved non-combustible barrier secured to the deck above and consisting either of trunking, troughing or similar means arranged to enclose the cables, or of continuous sheeting extending over the upper surface of the explosives to the extremities of the magazine No junction boxes, switches, fuses, lamp fittings or other electrical appliances or cable joints shall be allowed within the magazine.

Before the stowage of explosives is commenced, tests of the insulation resistance of the cores and of the continuity of the metal sheathing and armouring of any cables traversing the magazine shall be made to ascertain the conditions of the cables and the results of such tests certified by a competent person to the satisfaction of the Master of the ship

In any space containing a magazine or used for the stowage of explosives other than those enumerated in sub paragraph 1, any cables and electrical equipment situated between the bulkheads forming the boundary of the space, shall be sited in relation to the cargo or protected, so as to ensure freedom from mechanical damage and risk of fire All points to which portable apparatus could be connected must be effectively sealed to prevent their use

36. Other Cargo

Cargo other than explosives may, if of a kind not otherwise prohibited by these Rules, be placed in a magazine with explosives, provided that it is separated from them by a close lined partition.

37. Decontamination

When a vessel carrying " S.A.S." explosives reaches an overseas port the stowage space concerned will be inspected by a trained and equipped decontamination party, who will be responsible for supervising the removal of the explosives and for any decontamination action necessary. Special care is necessary in dealing with phosphorus leakage to ensure the *complete removal* of all loose phosphorus. When insulated spaces have been used for explosives charged G.1 or G 10, ventilation and lime washing of all *interior surfaces must be carried out immediately* the explosives are removed.

When S.A.S explosives have been carried, the Master or Agent must arrange for a very careful examination of the stowage place to be carried out, after unloading, by a fully qualified person and, if necessary, to have all interior fittings and linings thoroughly decontaminated. In particular, such spaces must not be used for the stowage of food until they have been certified clear of contamination and suitable for such stowage by a fully qualified person

At home ports, these duties will be carried out under the supervision of the Dock or Harbour Authorities who must be notified, in good time, by the Owners or Agents, of the expected date of arrival of the vessel The Owner or Agent will, however, be responsible that spaces required for the stowage of food have been effectively decontaminated.

38. Respirators

When explosives indicated by the letter (R) in Sub-section B are carried each member of the crew must be provided with a service pattern respirator for use on the voyage, except that when such explosives are limited to lachrymatory stores, composition (Type E) P N or chemical ampoules, stores charged with F M or C.S A M , six respirators only need be provided. Respirators will be supplied by the War Department or by Service Authorities of Visiting Forces.

39. Conducting Parties

Explosives in Group 13 (other than shell, mortar ammunition, steel " Bottles, Chemical " packed in activated charcoal in steel boxes secured by soldered steel wire, lachrymatory stores and chemical ampoules) must be accompanied throughout the voyage by a conducting party provided and equipped under arrangements made by the Service or Supply Department concerned. The strength of the party, and the protective and decontamination equipment to be supplied will be decided by the Service Department concerned.

40. Entry into Docks and Harbours

Government explosives bearing a mass explosion risk are designated as Shipping Category C and those bearing a mass fire risk or a limited explosion risk are designated as Shipping Category B The quantities permissible in any one ship in a dock or harbour are defined in the " Conveyance in Harbours of Government Explosives and Explosives of Visiting Forces Regulations, 1956 ". Government explosives in Group 6 classified as Safety Ammunition will not be subject to any quantity restriction

CLASSIFIED LIST OF GOVERNMENT AND VISITING FORCES EXPLOSIVES

(See separate list for U.S Visiting Forces Explosives, page 22A)

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Adapters, booster	6	C	O A S	
Adapters, exploder	6	C	O A.S	
Adapters, "K"	6	B	O.A.S	
Amatex	4	C	M S B	
Amatol	4	C	M.S B	
Ammonal	4	C	M S B	
Ammonium picrate	4	C	M.S B (L)	
Ampoules, chemical	13	B	S A S (D)(R)	See Notes 11 and 12
Ballistite	1	C	M.S A	
Ballistite in metallic containers	2	C	M.S B	See Note 9
Bangalore torpedoes	8	C	O A S	
Baratol	4	C	M S B	
Battle noises	4	C	M S B	
Blasting explosives	2	C	M S B	
Bombs, A.R.P	9	B	A.S P	See Note 5
Bombs, aircraft, A.P	5	C	O.A.S	
Bombs, aircraft, H E (High charge)	7	C	O A S	
Bombs, aircraft, H.E. (Low charge) (boxed)	6	C	O A.S	
Bombs, aircraft, H E. (Low charge) (loose)	5	C	O.A.S.	
Bombs, aircraft, H.E. (Medium charge)	5	C	O A S	
Bombs, aircraft, training	5	B	O.A.S	
Bombs, chemical	13	B	S.A.S (R)	See Notes 11 and 12
Bombs, demolition	8	C	O A.S	
Bombs, incendiary	11	B	O A S (D)	
Bombs, incendiary, liquid	15	B	P X S	
Bombs, incendiary, W P.	12	B	S.A S (D)(R)	See Note 8
Bombs, practice, flash	9	B	A.S P	See Note 5
Bombs, smoke	11	B	O A.S (D)	See Note 7
Bombs, T I	9	B	A.S.P	See Note 5
Bottles, chemical	13	B	S A.S (R)	See Notes 11 and 12
Boxes, junction	6	B	O A.S	
Bursters, bomb	6	B	O A S	
Bursters, gunpowder	1	C	M S.A.	
Bursters, H E.	1	C	M.S A	
Bursters, limpet	8	C	O A S	
Bursters, mine	6	B	O.A.S	
Candles, rocket, flare	9	B	A.S P.	See Note 5
Candles, smoke	11	B	O.A S (D)	
*Caps, percussion	6	—	O A S (C)	Safety Class
Capsules, delay	6	B	O.A.S	
*Cartridges, aiming rifle	6	—	O A S (C)	Safety Class
**Cartridges, B L	3	B	M S B	
**Cartridges, B L., with tub	6	B	O A.S.	
*Cartridges, bolt	6	—	O A S (C)	Safety Class
*Cartridges, cable cutting	6	—	O.A.S (C)	Safety Class
Cartridges, ejection	6	B	O A.S	
Cartridges, electric (H C)	6	B	O.A.S	
Cartridges, electric (L.C)	6	B	O.A.S.	
Cartridges, engine starter	6	B	O.A.S	
Cartridges, flash	9	B	A.S.P.	See Note 5
Cartridges, illuminating	9	B	A.S P	See Note 5
Cartridges, impulse, torpedo, cordite	6	B	O A.S	
Cartridges, impulse, torpedo, gunpowder	6	C	O A.S	
Cartridges, lachrymatory	13	B	S.A S (D)(R)	
*Cartridges, link	6	—	O A.S (C)	Safety Class
Cartridges, lowering undercarriage	6	B	O A.S	
Cartridges, M L., depth charge thrower	6	B	O A S	
*Cartridges, M L., mortar	6	—	O A.S (C)	Safety Class
Cartridges, M L., mortar, augmenting	1	C	M S A.	
Cartridges, M.L., mortar, augmenting in metallic containers	2	C	M.S B.	See Note 9
Cartridges, percussion (H C.)	6	B	O A.S.	
Cartridges, percussion (L C.)	6	B	O A S	
*Cartridges, pistol	6	—	O A S.(C)	Safety Class
*Cartridges, punch	6	—	O A S.(C)	Safety Class
Cartridges, Q F , chemical	13	B	S.A S (D)(R)	
Cartridges, Q F , H E.	6	B	O.A S	
Cartridges, Q F , H.E., high charge	6	C	O.A.S.	
Cartridges, Q F., incendiary	11	B	O.A.S (D)	
Cartridges, Q F , practice	6	B	O A S	

* See Note 3
** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Cartridges, Q.F., radar echo	6	B	O.A S	
Cartridges, Q F, separate	6	B	O A S.	
Cartridges, Q F., separate, gunpowder	6	C	O A S	
Cartridges, Q F, shot	6	B	O A S	
Cartridges, Q F, shrapnel	6	B	O A S	
Cartridges, Q F, smoke	11	B	O.A.S (D)	
Cartridges, Q F, smoke, F M or C S.A M	11	B	S A S (D)(R)	See Note 6
Cartridges, Q F, smoke, W P.	12	B	S A S (D)(R)	See Note 8
Cartridges, Q.F, star	6	B	O.A S.	
*Cartridges, radar echo	6	—	O.A.S (C)	Safety Class
*Cartridges, rim fire	6	—	O.A S (C)	Safety Class
*Cartridges, rocket	6	—	O A.S (C)	Safety Class
*Cartridges, S.A., ball	6	—	O A.S (C)	Safety Class
Cartridges, S.A, H.E	6	C	O A.S	
Cartridges, S A., H.E /I.	6	C	O.A S	
Cartridges, S.A., incendiary	6	B	O A.S	
*Cartridges, S A., piercing	6	—	O A.S.(C)	Safety Class
*Cartridges, S.A., separate	6	—	O A S (C)	Safety Class
*Cartridges, S.A., tracer	6	—	O A S (C)	Safety Class
Cartridges, S.A., W P.	12	B	O A.S (D)	
*Cartridges, shot gun	6	—	O A S (C)	Safety Class
Cartridges, signal	9	B	A.S.P	See Note 5
*Cases, cartridge, capped	6	—	O A.S (C)	Safety Class
Charges, cased	6	C	O A.S	
Charges, demolition	7	C	O.A.S	
Charges, gunpowder	1	C	M.S A.	
Charges, line	7	C	O.A.S	
**Charges, propellant, incremental	3	B	M S.B	
Charges, propelling	1	C	M S A.	
Clusters, flare	9	B	A S P.	See Note 5
Clusters, incendiary	11	B	O A.S (D)	See Note 7
Clusters, incendiary, W.P	12	B	S A.S (D)(R)	See Note 8
Compositions, (Type A), P.N	1	C	M S A.	
Compositions, (Type A), S.R	1	C	M S A.	
Compositions, (Type B), P.N	1	C	M S.A.	
Compositions, (Type B), S R.	1	C	M S.A.	
Compositions, (Type C), P N	11	B	U.C.S	
Compositions, (Type C), S R	11	B	U C S.	
Compositions, (Type D), P N.	11	B	O.A.S (D)	
Compositions, (Type D), S R	11	B	O A S (D)	
Compositions, (Type E), P N	13	B	S A.S (D)(R)	See Notes 11 and 12
**Compositions, (Type F), P N	1	B	M S A.	
**Compositions, (Type F), S R.	1	B	M S A.	
**Compositions, (Type G), P N.	1	B	M S A.	
**Compositions, (Type G), S R	1	B	M.S A.	
Compositions, (Type H), P N.	11	B	O A.S (D)	
Compositions, (Type H), S.R.	11	B	O.A S (D)	
Compositions, (Type J), P N.	11	B	O.A.S.(D)	
Compositions, (Type J), S R.	11	B	O.A.S (D)	
Compositions, (Type K), P N	11	C	O A S (D)	
Compositions, (Type K), S R	11	C	O.A.S (D)	
Compositions, (Type L), P N	11	C	O A.S (D)	
Compositions, (Type L), S R	11	C	O.A.S (D)	
Composition, illuminating	1	C	M S A.	
Composition, initiating, R D, dry, 1 oz. sample	10	B	M S D.	
Composition, initiating, R D, wet	10	C	M S D.	
Composition, match	1	C	M S A.	
Composition, priming	1	C	M S A.	
Composition, rocket	1	C	M.S A.	

* See Note 3
** See Note 14

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Composition, rocket, life-saving	1	C	M S A	
Containers, chemical ..	13	B	S A S (R)	See Notes 11 and 12
**Cordite	3	B	M S B	
Cordite, small arms, granular	1	C	M S.A.	
Cordite, small arms, granular in metallic containers	2	C	M S B	See Note 9
Cordtex	8	C	O.A.S.	See Note 13
Crackers, blank	9	B	A.S P.	See Note 5
Demolition explosives ..	4	C	M S B	
Depth charges	7	C	O.A.S	
Destructors, contact ..	8	C	O A.S.	
Destructors, H E. ..	8	C	O.A.S	
Destructors, incendiary ..	11	B	O A S (D)	
Detonator bursters ..	10	C	M S D.	
Detonators	10	C	M S D.	
Di-nitro-phenol	4	C	M.S.B (L)	See Note 1
Di-nitro-resorcinol ..	4	C	M S B (L)	See Note 1
Ejectors, contents ..	6	B	O A.S	
Ejectors, electric ..	6	B	O.A.S	
Ejectors, flare ..	6	B	O A.S.	
Exploders, C.E. (Tetryl)	1	C	M.S A	
Exploders, picric ..	4	C	M S B (L)	
Exploders, picric powder	1	C	M S A.(L)	
Exploders, RDX/Wax ..	4	C	M.S.B	
Exploders, T N.T. ..	4	C	M.S.B	
Explosive sweeps ..	8	C	O.A.S.	
Flares, ground ..	9	B	A.S P.	See Note 5
Flares, identification ..	9	B	A.S P.	See Note 5
Flares, illuminator ..	9	B	A.S P.	See Note 5
Flares, incendiary ..	11	B	O A S (D)	
Flares, reconnaissance ..	9	B	A.S P.	See Note 5
Flares, signal	9	B	A S.P.	See Note 5
Flashes, photographic (large)	5	C	O A.S.	
Flashes, photographic (medium)	6	C	O A.S.	
Floats, flare ..	9	B	A.S P.	See Note 5
Floats, lachrymatory ..	13	B	S.A.S (D)(R)	See Notes 11 and 12
Floats, signal	6	B	O.A S.	
Floats, smoke ..	11	B	O A.S.(D)	
Floats, smoke and flame	9	B	A.S P.	See Note 5
Fulminate of mercury, dry, 1 oz sample ..	10	B	M.S D.	
Fulminate of mercury, wet	10	C	M.S D.	
Fuse, detonating ..	4	C	O.A.S	
Fuse, instantaneous ..	6	B	O.A.S	
*Fuse, safety	6	—	O A.S.(C)	Safety Class
Fuze powders ..	1	C	M.S A.	
Fuzes	6	B	O.A S.	
Fuzes, mine, A Tk. No 3	10	C	U.C S	
Fuzes, with exploders ..	6	C	O A S	
Games	6	B	O A.S	
Generators, chemical ..	13	B	S.A S (R)	See Notes 11 and 12
Generators, lachrymatory	13	B	S.A S (D)(R)	See Notes 11 and 12
Generators, smoke ..	11	B	O.A S (D)	
Grenades, H E ..	8	B	O A.S	
Grenades, H E /H C	8	C	O A.S	
Grenades, H E /M C	8	C	O A.S	
Grenades, incendiary	11	B	O.A S (D)	
Grenades, lachrymatory	13	B	S.A.S (D)(R)	See Notes 11 and 12
Grenades, signal	9	B	A.S P.	See Note 5
Grenades, smoke ..	11	B	O.A.S (D)	
Grenades, smoke, W.P. ..	12	B	S A S (D)(R)	See Notes 8 and 10
Guncotton, dry ..	1	C	M S.A.	
Guncotton, sets, demolition	4	C	M S.B	
Guncotton, wet	4	C	O A.S.	
Guncotton, wet, loose	4	C	M S.B	
Gunpowder	1	C	M S.A.	
Heads, rocket, flare	9	B	A.S.P.	See Note 5
Heads, rocket, radar echo	6	B	O A.S.	
Heads, rocket, target ..	9	B	A.S P.	See Note 5
Heads, T-cutters ..	6	B	O A S.	
Igniters, electric	6	B	O A.S	
Igniters, flame thrower ..	9	B	A.S P.	See Note 5
Igniters, fuse	6	B	O.A.S	
Igniters, gunpowder ..	1	C	M.S A.	
Igniters, rocket ..	9	B	A S P.	See Note 5
*Igniters, safety ..	6	—	O.A.S (C)	Safety Class

** See Note 14

* See Note 3

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Igniters, shell	6	B	O.A.S	
Igniters, smoke	9	B	A.S.P	See Note 5
Igniters, torpedo	11	B	O.A.S (D)	
Indicators, A/S, training	9	B	A.S.P	See Note 5
Indicators, mine, firing	9	B	A.S.P.	See Note 5
Initiators, thermal	6	B	O.A.S	
Kits, waterproofing	8	C	O.A.S.	
Lead azide, wet or dry, 1 oz. sample ..	10	B	M.S.D	
Lights, service	9	B	A.S.P	See Note 5
Markers, smoke ..	11	B	O.A.S (D)	
Mines, alarm ..	9	B	A.S.P	See Note 5
Mines, anti-personnel	8	C	O.A.S	
Mines, cases, charge	7	C	O.A.S	
Mines, chemical	13	B	S.A.S (R)	See Notes 11 and 12
Mines, contact ..	7	C	O.A.S.	
Mines, land	8	B	O.A.S	
Mines, underwater	7	C	O.A.S	
Minol	4	C	M.S.B	
Mortar ammunition, chemical	13	B	S.A.S (R)	See Notes 11 and 12
Mortar ammunition, H.E (light)	8	B	O.A.S.	
Mortar ammunition, H.E (medium)	8	C	O.A.S	
Mortar ammunition, practice	8	B	O.A.S	
Mortar ammunition, radar echo	8	B	O.A.S	
Mortar ammunition, signal	9	B	A.S.P.	See Note 5
Mortar ammunition, smoke	11	B	O.A.S (D)	
Mortar ammunition, smoke, F.M. or C.S.A.M.	11	B	S.A.S (D)(R)	See Note 6
Mortar ammunition, smoke, W.P.	12	B	S.A.S (D)(R)	See Note 8
Motors, rocket (boxed) .	6	B	O.A.S	
**Motors, rocket, H.C., (boxed)..	6	B	O.A.S	
**Motors, rocket, H.C., (loose)	8	B	O.A.S.	
Nitrated paper	3	B	M.S.B	
**Nitro-cellulose cannon powder	3	B	M.S.B.	
Nitro-cellulose small arms granular powder	1	C	M.S.A	
Nitro-cellulose small arms granular powder in metallic containers	2	C	M.S.B	See Note 9
Nitro-guanidine (Picrite)	4	C	M.S.B	
Nobel's 808	2	C	M.S.B	
Nobel's 809	2	C	M.S.B	
Nobel's 896	4	C	M.S.B	
Pentolite .	4	C	M.S.B	
Petards	8	C	O.A.S	
P.E.T.N., dry, 1 oz. sample	10	B	M.S.D	
P.E.T.N., wet ..	4	C	M.S.B	See Note 2
P.E.T.N./Wax	4	C	M.S.B	
Picric acid	4	C	M.S.B (L)	See Note 1
Picric powder	1	C	M.S.A (L)	
Plastic explosive	4	C	M.S.B	
**Plastic propellant, type 1	3	B	M.S.B (L)	
Plastic propellant, type 2	2	C	M.S.B (L)	
Portfires	9	B	A.S.P.	See Note 5
Potassium di-nitro-phenate	4	C	M.S.B (L)	See Note 1
Primers, C.E. (Tetryl)	1	C	M.S.A.	
Primer detonators	6	B	O.A.S	
Primers, electric	6	B	O.A.S	
Primers, electric & percussion	6	B	O.A.S.	
Primers, metal, H.E.	8	C	O.A.S.	
Primers, percussion	6	B	O.A.S.	
Projectiles, A/S, fuzed	7A	C	O.A.S.	
Projectiles, A/S., plugged	7	C	O.A.S.	
Projectiles, H.E., hedgehog	8	C	O.A.S.	
Projectiles, H.E., hedgerow	8	C	O.A.S.	
Projectiles, hedgehog, weighted	6	B	O.A.S.	
Projectiles, practice, hedgerow	6	B	O.A.S.	
Projector ammunition, H.E. ..	8	C	O.A.S	
Projector ammunition, practice . .	8	B	O.A.S	
Propellant compositions	2	C	M.S.B	
Puffs, cordite	1	C	M.S.A.	

** See Note 14

Description (Generic Transport Designation)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
(1)	(2)	(3)	(4)	(5)
Puffs, cordite, in metallic containers	2	C	M S B	See Note 9
Puffs, gunpowder	1	C	M S A	
Puffs, powder, with igniter	6	C	O A S.	
Puffs, smoke	11	B	O.A.S (D)	
Quickmatch	1	B	O A S.	
R.D.X , dry, 1 oz. sample	10	B	M S D	
R.D.X., wet	4	C	M S B	See Note 2
R D X T N T	4	C	M S B	
R.D.X./Wax	4	C	M S B	
Relays, electric	6	B	O A S	
Rockets, H.E.	8	C	O A S	See Note 4
Rockets, H.E /H C.	8	C	O A S	
Rockets, illuminating	9	B	A.S.P	See Note 5
Rockets, line	9	B	A S P	See Note 5
Rockets, practice	9	B	A S P	See Note 5
Rockets, signal	9	B	A S P	See Note 5
Rockets, training	8	B	O A S	See Note 4
Sets, fuzing	6	B	O A.S	
Sets, initiating charges	8	B	O.A S	
Shell, chemical	13	B	S A.S (R)	See Notes 11 and 12
Shell, flare (boxed)	6	B	O.A.S	
Shell, flare (loose)	5	B	O A S (D)	
Shell, H E (boxed)	6	B	O A.S	
Shell, H E (loose)	5	C	O A.S (D)	
Shell, H E., A/C., rocket	8	C	O.A S.	
Shell, H E , armour piercing (loose)	5	B	O.A S (D)	
Shell, H E., high charge	6	C	O A.S.	
Shell, H E , piercing (loose)	5	C	O.A.S (D)	
Shell, H.E , rocket	8	C	U C S	
Shell, H E., S.A P (loose)	5	C	O.A.S (D)	
Shell, incendiary	11	B	O.A.S (D)	
Shell, practice (loose)	5	B	O.A S (D)	
Shell, practice (boxed)	6	B	O.A S	
Shell, radar echo (loose)	5	B	O A S (D)	
Shell, radar echo (boxed)	6	B	O.A S.	
Shell, shrapnel (loose)	5	B	O.A.S (D)	
Shell, shrapnel (boxed)	6	B	O A.S	
Shell, smoke	11	B	O.A.S (D)	
Shell, smoke, exploding	11	B	O.A.S (D)	
Shell, smoke, F.M or C.S.A.M	11	B	S.A.S (D)(R)	See Note 6
Shell, smoke, W P	12	B	S A S (D)(R)	See Note 8
Shell, star (loose)	5	B	O A S (D)	
Shell, star (boxed)	6	B	O A S	
Shot, tracer	5	B	O A S (D)	
Shot, with tracer (boxed)	6	B	O A S	
Signals	9	B	A S.P	See Note 5
Signals, drift, night	11	B	O A S (D)	
*Signals, fog	6	—	O.A S (C)	Safety Class
Simulators, gunflash	9	B	A S P	See Note 5
Simulators, R F or M G	10	C	M S D.	
Sleeves, fuze	10	C	M S D.	
Styphnic acid, dry, 1 oz. sample	10	B	M S B (L)	
Styphnic acid, wet	4	C	M S B (L)	See Note 2
Switches	6	B	O A S.	
Switches, H.E.	8	C	O.A.S.	
Tetryl (C E)	1	C	M S A.	
Thunderflashes	9	B	A S P	See Note 5
T N T	4	C	M S B	
Torpex	4	C	M S B	
Tracers	9	B	A S.P	See Note 5
Tritonal	4	C	M S B.	
Tubes, electric	6	B	O A S.	
Tubes, friction	6	B	O.A.S.	
Tubes, percussion	6	B	O.A S	
Warheads	7	C	O.A.S.	

* See Note 3

NOTES RELATING TO THE LIST OF GOVERNMENT EXPLOSIVES COMPRISING SUB-SECTION B

Note 1

Picric acid, potassium di-nitro-phenate and di-nitro-resorcinol containing 33⅓ per cent. of water, calculated on the wet material, are non-explosive.

Di-nitro-phenol containing 15 per cent. of water calculated on the wet material is non-explosive

Di-nitro-resorcinol, di-nitro-phenol, picric acid and potassium di-nitro-phenate may only be consigned as non-explosive when wetted as indicated and provided the di-nitro-resorcinol, di-nitro-phenol or potassium di-nitro-phenate is packed in a watertight package.

Note 2

P.E T N. or R.D X. must be wetted with 25 per cent of water and styphnic acid with 20 per cent. of water, calculated on the wet material, for carriage by sea. This is a safety precaution only, and does not render the material non-explosive. Watertight packages must be used.

Note 3

Explosives included in the Safety Class bear the Group 6 Government Explosives Label including the words "Safety Class" (older labels may include the words "Safety Cartridges" instead). They may be conveyed by passenger ship in any reasonable quantity either in peace or war, in their normal service packages.

Note 4

Fully assembled rockets, H.E., or rockets, training, must be stowed with the head towards a bulkhead. Packages are marked to indicate the head.

Note 5

Group 9 explosives must not be overstowed.

Note 6

Packages containing ammunition charged with F.M. or C.S.A.M. must bear the label or stencil "S.A.S." when forwarded for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 7

Bombs, smoke, and clusters, incendiary, in Group 11 must not be overstowed.

Note 8

Packages containing explosives belonging to Group 12 requiring S.A.S. stowage must be labelled or stencilled "S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 9

The metallic containers must be airtight, a luting seal is not sufficient.

Note 10

Grenades, smoke, WP, when not packed in scored tinplate cylinders must be certified as having passed 100 per cent. examination within one month before shipment.

When certified as packed in scored tinplate cylinders and to have been produced within one year of the date of shipment, the 100 per cent. examination of the grenades is not required.

When the period which has elapsed since production of grenades packed in these cylinders exceeds a year it must be certified that the scored cylinders have passed 100 per cent. external visual inspection for freedom from corrosion or damage, within three months before shipment.

Note 11

All types of chemical ammunition (other than shell, mortar ammunition, steel chemical bottles—when packed in activated charcoal, lachrymatory stores and chemical ampoules) must have a conducting party.

Note 12

Packages containing explosives belonging to Group 13 must be labelled or stencilled "S.A.S." for shipment and, except in the case of artillery shell, Q.F. cartridges and mortar ammunition, must not be overstowed.

Note 13

O.A.S. conditions for cordtex are conditional upon the exposed ends of the explosives being effectively sealed and the use of a stout wooden package for the explosive. If these conditions are not fulfilled the stowage conditions will be M.S.A. Cordtex must not be overstowed.

Note 14

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours.

DANGEROUS GOODS OF NON-EXPLOSIVE CATEGORIES RELATED BY FUNCTION TO EXPLOSIVES

There are some dangerous goods used in the Services which are categorised in the non-explosive categories of "Dangerous Goods" as given in Statutory Instrument No. 1977/1952 under the title "The Merchant Shipping (Dangerous Goods) Rules, 1952". The designations of these types together with the nature of the danger to which they give rise, as indicated by the categories to which they belong, are given in the following table.

Designation of Items (1)	Dangerous Substance (2)	Category in accordance with S.I. No. 1977 of 1952 (3)	Section of Report applicable (4)
Ampoules, acetone	Acetone	(v)	5
Ampoules for mine, practice, contact, A.Tk.	Chlorsulphonic acid mixture	(iii)	3
Bomb, aircraft, practice, flame, break-up 8½ lb.	Phosphide	(vi)	6
Bomb, aircraft, practice, smoke, break-up 8½ lb.	Titanium tetrachloride	(iii)	3
Bomb, aircraft, practice, smoke, filled F.M. or C.S.A.M.	Titanium tetrachloride or chlorsulphonic acid mixture	(iii)	3
Bomb, incendiary, AN-M, lb., filled T.P.1. (See Group 15 for these bombs fitted with exploders)	Petrol	(v)	5
Candles, smoke, white	Phosphide	(vi)	6
Container, smoke	Titanium tetrachloride	(iii)	3
Destructor, incendiary No. 2 (See Group 11 for other numbers)	Petrol	(v)	5

Designation of Items (1)	Dangerous Substance (2)	Category in accordance with S I No 1977 of 1952 (3)	Section of Report applicable (4)
Drums, F M	Titanium tetrachloride	(iii)	3
Drums, aniline-furfuryl alcohol mixture	Aniline and furfuryl alcohol	(iv)	4 stowage away from acids
Drums, inhibited red fuming nitric acid	Fuming nitric acid	(iii)	3
Flamefloats, aircraft, navigation	Phosphide	(vi)	6
Generator, smoke, Y4 F F training, with touch paper ignition (See Group 11 for electric fuze ignition)	Sulphur and sodium nitrate	(x)	7b
Installation, S C , type G, lb , filled F M	Titanium tetrachloride	(iii)	3
Light, indicating lifebuoy	Phosphide	(vi)	6
Light, indicating torpedo	Phosphide	(vi)	6
Marker, marine, aircraft	Phosphide	(vi)	6
Marker, sea, aluminium	Aluminium powder	(vi)	6
Matches, flamer	Match composition	(x)	7b
Matches, fuzee, safety	Match composition	(x)	7b
Matches, waterproof safety	Match composition	(x)	7b
Mine charge cases, filled sodium phosphide	Phosphide	(vi)	6
Pistols, aircraft bomb with acetone ampoules	Acetone	(v)	5
Slow match	Potassium nitrate	(x)	7a
Submarine bubble decoy	Magnesium and iron powder	(vi)	6

These types of ammunition must not be labelled or marked to suggest they contain explosives and must not be consigned for transport as explosives The package (or weapon, if loose) must be stencilled or labelled to indicate the designation of the ammunition, the substance contained which brings it under the "Dangerous Goods" Rules and the nature of the risk corresponding to its category as given in the Rules, e g Installation, S C, Type G, 250 lb—Titanium Tetrachloride—Corrosive In the case of ammunition belonging to Category (v) it is also necessary to add stencilling or a label bearing the words "Highly Inflammable—Flash Point below 73°F" or "Inflammable—Flash Point 73°–150°F", as applicable The stowage of these types of ammunition in relation to explosives will be governed by the conditions laid down for the dangerous substance which they contain

Description (I C C Shipping Name)	Group	Shipping Category	Stowage Conditions in Cargo Ships	Remarks
Instantaneous fuse	6	B	O A S	
Jet thrust Units, Class A	6	B	O.A S	
Jet thrust Units, Class B	6	B	O A S	
Low explosives	9	B	A S P	See Note 6
*Percussion caps	6	—	O.A S (C)	Safety Class
Percussion fuzes	6	B	O A S	
Percussion primers	6	B	O A S.	
Primers for cannon	6	B	O A S	
*Primers for small arms	6	—	O.A.S (C)	Safety Class
Rifle grenades (explosive)	8	B	O A S	
Rocket ammunition with empty projectiles	6	B	O A S	See Note 7
Rocket ammunition with explosive projectiles	8	C	O.A S	See Note 7
Rocket ammunition with gas projectiles	13	B	S.A S (R)	See Notes 1, 2 and 7
Rocket ammunition with illuminating projectiles	6	B	O A S.	See Note 7
Rocket ammunition with incendiary projectiles	11	B	O A S (D)	See Note 7
Rocket ammunition with incendiary projectiles (W P)	12	B	S A S (D)(R)	See Notes 3 and 7
Rocket ammunition with inert loaded projectiles	6	B	O.A S.	See Note 7
Rocket ammunition with smoke projectiles	11	B	O A S (D)	See Notes 7 and 10
Rocket ammunition with smoke projectiles (W P)	12	B	S A S (D)(R)	See Notes 3 and 7
Rocket ammunition with solid projectiles	6	B	O A.S	See Note 7
Rocket ammunition without projectiles	6	B	O A S.	
*Safety fuse	6	—	O A S (C)	Safety Class
*Safety squibs	6	—	O.A S (C)	Safety Class
*Small arms ammunition	6	—	O.A.S (C)	Safety Class
**Smokeless powder for cannon	3	B	M S B.	See Note 4
Smokeless powder for small arms	1	C	M S.A.	
Smokeless powder for small arms in metallic containers	2	C	M S B	See Note 8
Smoke projectiles	11	B	O A S (D)	See Note 10
Smoke projectiles (W.P)	12	B	S A.S.(D)(R)	See Note 3
Time fuzes	6	B	O.A S	
Tracer fuzes	6	B	O.A S (C)	
Tracers	9	B	A S P	See Note 6

* See Note 9

** See Note 4

NOTES RELATING TO THE LIST OF UNITED STATES VISITING FORCES EXPLOSIVES INCLUDED IN SUB-SECTION B

Note 1

All types of gas ammunition (other than cannon projectiles, mortar ammunition and lachrymatory stores) must have a trained conducting party, provided with decontamination equipment for dealing with leakages

Note 2

Packages containing explosives belonging to Group 13 must be labelled or stencilled " S A S " for sea transport and, except in the case of cannon projectiles, fixed or semi-fixed complete artillery rounds and mortar ammunition, must not be overstowed.

Note 3

Packages containing explosives belonging to Group 12 requiring S A S stowage must be labelled or stencilled " S.A S " for sea transport and, except in the case of cannon projectiles, fixed or semi-fixed complete artillery rounds and mortar ammunition, must not be overstowed.

Note 4

When these explosives belonging to Shipping Category B marked with a double star are in the same vessel as explosives belonging to Shipping Category C and are not separated from such explosives either by the boiler room and engine room of the vessel or by a hold of the vessel, they will be deemed to be explosives belonging to Shipping Category C whilst in the vessel in accordance with regulations for conveyance in harbours

Note 5

O A S conditions for cordtex and primacord are conditional upon the exposed ends of the explosive being effectively sealed and the use of a stout wooden package for the explosive If these conditions are not fulfilled the stowage conditions will be M S A These explosives must not be overstowed.

Note 6

Group 9 explosives must not be overstowed.

CLASSIFIED LIST OF COMMERCIAL EXPLOSIVES SHOWING HOME OFFICE CLASS AND DIVISION, EQUIVALENT SERVICE CLASSIFICATION AND STOWAGE CONDITIONS REQUISITE FOR EACH ITEM

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Ajax " S "	III 1	2	M S.B
Aluminite No. 1	III 2	4	M S.B
Aluminite No. 2	III 2	4	M S.B
Aluminite No. 3 ..	III 2	4	M S.B
Aluminium Torches	VII 2	9	A.S.P.
Aluminium Torches, Standard Brand	VII 2	9	A.S.P.
Amatol	III 2	4	M S.B
Amberite No 2 ..	III 2	4	M S.B.
(d) American Ballistite	III 1	2	M S.B.
Ammonal	III 2	4	M S.B
Ammonal No. 3 ..	III 2	4	M S.B.
Ammonal " M "	III 2	4	M S B.
Ammon Dynamite	III 1	2	M S.B
Ammonex	VI 2	6	O A.S.
Ammon Extra Dynamite	III 1	2	M.S.B
Ammon Gelatine	III 1	2	M S B
Ammon Gelatine Dynamite	III 1	2	M S B
Ammon Gelignite	III 1	2	M S B
Ammon Gelignite No. 2	III 1	2	M S.B
Ammon Gelignite No. 3	III 1	2	M.S.B.
Ammonium Picrate	III 2	1	M S.A.(L)
Ammospex	II	1	M S A
(a) Amorces	VII 2	9	A S.P
A.N. Gelatine Dynamite " 75 "	III 1	2	M S B
A.N. Gelignite " 60 "	III 1	2	M S B
A.N. Gelignite " 50 "	III 1	2	M S B
A.N. Gelignite " 40 "	III 1	2	M S B.
Antifrost Ammon Gelatine Dynamite	III 1	2	M S B
Antifrost Ammon Gelignite	III 1	2	M S B
Antifrost Ammon Gelignite A, B, C, E, F, G	III 1	2	M S B
Antifrost Blasting Gelatine	III 1	2	M S B
Antifrost Nitrox No 2 " S "	III 1	2	M S B
Antifrost N.S Gelatine Dynamite	III 1	2	M S B.
Antifrost Penrhyn Powder " S "	III 1	2	M S.B
Antifrost Penrhyn Powder No 2 " S "	III 1	2	M S B.
(e) Antifyre Percussion Caps	VI 1	6	O.A.S.(C)
Aquadex	III 1	2	M S.B
Arctic Dynamite	III 1	2	M.S.B
(d) Ardeer Ballistite	III 1	2	M S B
Ardeer Cordite	III 1	3	M S B
Ardeer Propellant Composition No 2 (" A.P.C. No. 2 ")	III 2	3	M S B
Ardex	III 2	4	M S B
(d) Armorite	III 1	2	M S B.
A.R.P. Practice Incendiary Bombs	VII 2	9	A S P

For Notes see end of list

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Axite No. 3	III 1	2	M S B
Azofog Insecticidal Smoke Generator	VII 2	11	O.A S (D)
(*d*) Ballistite	III 1	2	M S B
(*d*) Ballistite A.16	III 1	2	M S B
(*d*) Ballistite B 16	III 1	2	M S B
(*d*) Ball Powder	III 1	2	M.S B
Baratol	III 2	4	M.S.B
(*c*) Barium Tri-nitro-resorcinate	V 2	10	M S D
(*a*)(*e*) Battery Pockets	VI 1	6	O.A.S (C)
Belex	III 1	2	M S B
Belex 1 1	III 1	2	M S.B.
Belex 2.2	III 1	2	M S B
Belex 3 3	III 1	2	M S B
Belex 4 4	III 1	2	M S B
Belex 5.5	III 1	2	M S B
(*a*) Belisha Beacons	VII 2	9	A.S P.
Bengal Sparklers (1st, 2nd, 3rd, 4th, 5th, 6th Definitions)	VII 2	9	A.S P.
Bengal Torches (1st, 2nd, 3rd Definitions)	VII 2	9	A.S.P
Bickford's Patent Volley Firers	VI 2	6	O.A.S
Bird Scarers	VII 2	9	A.S P
Blackpowder Igniter Wick	VI 2	1	O A S
Blasting Abelite	III 2	4	M S B
Blasting Gelatine	III 1	2	M S B
Blasting Gelatine (A)	III 1	2	M S.B
Blasting Matagnite	III 1	2	M S.B
Bombs, Aircraft, Target Identification	VII 2	9	A.S P
Bombs, Aircraft, Training, Smoke and Flash No 1 (25 lb.)	VII 2	9	A.S.P
Brock's Bengals	VII 2	9	A S P
Brock's Igniters	VII 2	9	A S P
Brock's Smoke Generators Types B 1, B 2, B.3 and B 4	VII 2	9	A.S.P
Burrowite	III 2	4	M S B
Burrowite No 1	III 2	4	M S B
Burrowite No. 2	III 2	4	M.S B
Burrowite No. 3	III 2	4	M S B
Burrowite G.N	III 2	4	M.S.B
Burrowite M B Rex	III 2	4	M S.B
Burrowite Super Rex	III 2	4	M S.B
Candles, Smoke, Yellow	VII 2	11	O A.S.(D)
Capped (Detonator) Safety Fuze	VI 3	10	M S D.
Capped Fuzes with Connectors	VI 3	10	M S D
Carrick Short Delay Detonators	VI 3	10	M S.D
Cartridges for Cannon, etc., O. in C No 1	VI 2	3	M.S B
Cartridges for Emergency Undercarriage Lowering Device	VI 2	6	O A.S
Cartridges for Velocity Power Drive	VI 3	6	O.A S
Cartridges for Small Arms, O in C No 1	VI 2 & 3	6	O.A.S

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para 21 of Section 1)
Cartridges, Cockpit Canopy, Jettison	VI 3	6	O A.S.
Cartridges, Illuminating	VII 2	9	A S P.
(e) Cartridges, Safety	VI 1	6	O A S (C)
Cartridges, Seat Ejection, Auxiliary	VI 3	6	O A.S
Cartridges, Seat Ejection, Drogue	VI 3	6	O.A S
Cartridges, Seat Ejection, Primary	VI 3	6	O A.S
Cartridges, Signal	VII 2	9	A S.P.
(e) Cases, Cartridges, Safety Capped (Empty)	VI 1	6	O A S (C)
(e) Cases for Turbo-Starter Cartridges (Empty) Primed	VI 1	6	O A.S.(C)
C.D B	III 1	3	M S B
C D B Rocket Motors	VI 2	6 (boxed) 8 (loose)	O A S.
Celmonal	III 2	4	M S B.
Celmonal X	III 2	4	M S B
Celmonite	III 2	4	M S B
Celmonite Ripping	III 2	4	M S B
Chemical Heater Igniters	VI 2	6	O A S.
Chemical Heater Igniters, Type B	VI 2	6	O A.S
(d) Chilworth Smokeless Powder No 2	III 1	2	M S B
(d) Clermonite Powder No 2	III 2	2	M S B
Colespex	III 1	2	M S B
Colex No. 1 "S"	III 1	2	M S B
Colex No 2 "S"	III 1	2	M S B
Colliery Explosive "C.7"	III 2	4	M S B.
Collodion Cotton	III 2	4	M.S.B.
Coloured Fire Torches	VII 2	9	A.S P.
Coloured Flame Torches	VII 2	9	A.S P.
Coloured Smoke Candles	VII 2	9	A S.P.
Coloured Sparklers	VII 2	9	A.S.P.
Comets	VII 2	9	A.S.P.
Commercial Waterproof Primers	III 2	4	M S.B.
Compex No 1	III 1	2	M.S B.
Compex No. 2	III 1	2	M.S B.
Composition R.D 1354	V 2	10	M.S.D.
Confetti Bombs	VII 2	9	A S P.
Cooke's Explosive No 104	III 2	4	M S B
Cooke's Explosive No. 124	III 1	2	M S B
Coolite A	III 1	3	M S.B
(d) Cooppal's 76 Powder	III 2	2	M S B
(d) Cooppal's Excelsior C.28	III 2	2	M S B
(d) Cooppal's Excelsior Powder	III 2	2	M S B
(d) Cooppal's Minerva Smokeless Powder	III 2	2	M.S.B
(d) Cooppal's Perfecta Powder	III 2	2	M S B.
(d) Cooppal's Sagitta Powder	III 2	2	M S B
(d) Cooppal's No 2 Smokeless Powder	III 2	2	M S B
(b) Co-precipitated Lead Azide/ Lead Dinitro-resorcinate	V 2	10	M S D
Cordeau Bickford	VI 2	4	O A S
Cordite	III 1	3	M S B.
Cordite A	III 1	3	M S B.

For Notes see end of list

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Cordite A.N.	III 1	3	M S B
Cordite A.S N.	III 1	3	M.S B
Cordite C.D.	III 1	3	M.S.B
Cordite C.D P.	III 1	3	M S.B
Cordite D.B P.	III 1	3	M S.B
Cordite H.W.	III 1	3	M S B
Cordite M D	III 1	3	M S B
Cordite N	III 1	3	M S B
Cordite N K	III 1	3	M S B
Cordite N.P	III 1	3	M.S B
Cordite N Q	III 1	3	M.S.B
Cordite N Q K.	III 1	3	M S.B
Cordite N Q P.	III 1	3	M S.B.
Cordite R.D N /A.Q	III 1	3	M S B.
Cordite R.D Q.	III 1	3	M S.B.
Cordite W.	III 1	3	M S.B.
Cordite W.M	III 1	3	M S B
Cordtex	VI 2	8	O.A S
Cordtex Train Assemblies	VI 2	6	O.A S
(a) Crack Shots	VII 2	9	A.S P
(e) Curtis's and Harvey's Safety Electric Fuzes	VI 1	6	O A S (C)
(g) Cyclotrimethylene Trinitramine (R.D.X.)	III 2	4	M.S B
(d) D B Casting Powder	III 2	2	M S B
(d) D B C. Casting Powder	III 1	2	M S B
D B.H. Casting Powder	III 1	2	M S B
D B M. Casting Powder	III 1	2	M.S.B.
Delay Arming Cartridge Unit	VI 3	6	O A.S.
Delay Composition	II	1	M S A
Delay Detonators	VI 3	10	M S D
Delay Elements	VI 2	6	O.A.S.
(e) Delay Fuze Assembly (10 Seconds)	VI 1	6	O.A.S (C)
Delay Puffers	VI 3	10	M S.D
Denespex	III 1	2	M S.B.
Detonating Fuze	VI 2	4	O A.S
Detonating Fuze Boosters (D F Boosters)	VI 2	1	M S.A.
Detonating Relays	VI 3	10	M S D.
Detonators, Electric	VI 3	10	M S D.
Detonators for 20 mm Hispano Ammunition	VI 3	10	M S D
Detonators, O. in C. No. 1	VI 3	10	M S D.
Detonator Packs	VI 3	10	M.S D.
Detonator Time Fuze	VI 3	10	M S D.
Detonita	III 1	2	M S B
(h) Di-nitro-phenol	III 2	4	M S.B (L)
(i) Di-nitro-resorcinol	III 2	4	M S.B (L)
Driftex " S "	III 1	2	M S B
DuPont Extra C .	III 1	2	M S B
DuPont Extra D	III 1	2	M S B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
DuPont Gelatin L F.	III 1	2	M S B
(d) DuPont Powder No. 15	III 2	2	M S B
(d) DuPont Powder No 16	III 2	2	M S B.
(d) DuPont Powder No. 25	III 2	2	M S.B.
(d) DuPont Smokeless Shotgun Powder	III 2	2	M.S.B
Duprelite	III 1	2	M S B
Duprex	III 1	2	M S B
Dynamite	III 1	2	M.S.B
Dynamite No 1	III 1	2	M S B
Dynobel No 2 "S"	III 1	2	M S B.
(d) E C. Sporting Powder	III 2	2	M S B.
Electric Boosters	VI 3	10	M S.D
Electric Detonators	VI 3	10	M S D.
Electric Detonators for Boosters	VI 3	10	M S.D
(k) Electric Fuzes (1st, 2nd, 3rd and 4th Definitions)	VI 2	6	O A.S
(e) Electric Lighters for Igniter Cord	VI 1	6	O A.S
Electric Primers	VI 2	6	O.A.S.
Electric Seismic Primer	VI 3	10	M S D.
Electric Sparklers	VII 2	9	A S.P
Electrosounders	VI 3	10	M S D.
(a)(e) Eley Kynoch No 1A Percussion Cap	VI 1	6	O.A.S (C)
(a)(e) Eley Kynoch No 1B Percussion Cap	VI 1	6	O.A.S (C)
(a)(e) Eley Kynoch No 91 Percussion Cap	VI 1	6	O.A.S (C)
(d) Empire Powder	III 2	2	M S B
Equamite	III 2	4	M S B
Equicol	III 1	2	M S.B
Equinox	III 1	2	M S B.
Eversoft Ammon Gelignite	III 1	2	M S B.
Eversoft Blasting Gelatine	III 1	2	M S B.
Eversoft Gelamex	III 1	2	M S B.
Eversoft Gelamex No 1	III 1	2	M S.B
Eversoft Gelamex No 2	III 1	2	M.S B.
Eversoft Gelamex No 3	III 1	2	M.S B
Eversoft Gelamex "C"	III 1	2	M.S.B.
Eversoft Gelignite	III 1	2	M.S B.
Eversoft Opencast Gelignite	III 1	2	M S B
Eversoft Plaster Gelatine	III 1	2	M S B.
(e) Excelsior Safety Electric Fuzes	VI 1	6	O A.S.(C)
Exploders for Bombs and for Mines	VI 3	1	M S A.
Exploders for Shells, Bombs, Mines, Depth Charges and Torpedoes	VI 2	1	M.S A.
Exploders for Shell	VI 3	1	M.S A.
Explosive C	III 2	4	M.S B.
(a) Explosive Corks	VII 2	9	A.S P
(e) Explosive Motors	VI 1	6	O A S.
Filled Bombs and Grenades	VI 2 & 3	7, 7a & 8	O.A.S
Filled Bombs, Depth Charges, Mines and Torpedoes	VI 2 & 3	7 & 7a	O.A.S.

For Notes see end of list

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Filled Games	VI 2 & 3	6	O.A S
Filled Shells	VI 2 & 3	5 & 6	O A S.
Fire Detector and Fire Extinguisher Actuator	VI 2	6	O A S
(e) Fire Extinguisher Actuator	VI 1	6	O A.S (C)
Firework Composition	VII I	I	M S A.
Fireworks, Manufactured	VII 2	9	A S.P
(e) Flame Detector Cord	VI 1	6	O A.S (C)
Flares, Infra Red	VI 2	9	O.A S
Flares, Trip-Wire	VII 2	9	A S P
(a) Flashlight Ignition Caps (1st and 2nd Definitions)	VII 2	6	O A S
(a) Flashlight Ignition Tape	VII 2	9	A.S.P
Flash Sound Signals	VII 2	9	A S.P
Float Flares	VII 2	9	A.S P
Float, Lachrymatory	VI 3	13	S.A S (D) (R)
Float, Signal, Submerged, with Granade	VII 2	9	A S P
Floats, Smoke, Flare, 3½ lb	VII 2	9	A.S.P
(e) Fog Signals, Railway, O. in C No. 1	VI I	6	O A S (C)
Friction Tubes	VI 3	6	O A S (C)
(c) Fulminate of Mercury	V 1	10	M S.D
(e) Fuzehead Assemblies	VI 1	6	O A S (C)
(b) Fuze Heads for Cardox Heaters	VI 2	6	O.A.S
(b) Fuze Heads for Delay Detonators	VI 2	9	A S.P
(b) Fuze Heads for Electric Detonators and Safety Electric Fuzes (1st, 2nd and 3rd Definitions)	VI 2	6	O A.S

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para. 21 of Section 1)
Fuze Igniters	VI 2	6	O.A S.
Fuze Lighters (1st, 2nd and 3rd Definitions)	VI 2	6	O A S
Fuzes for Shells, Bombs and Flares	VI 2 & 3	6	O.A S (C)
Gelatine	III 1	2	M S.B.
Gelatine (A)	III 1	2	M S.B.
Gelatine Dynamite	III 1	2	M S.B.
Gelex A	III I	2	M S.B
Gelignite	III 1	2	M S.B.
Gelignite (A)	III 1	2	M S.B.
Gelignite No. 2	III 1	2	M S B.
Gelignol	III 1	2	M S B
Geobel	III 1	2	M S B
Geobel No. 2	III I	2	M S B.
Geobel No. 3	III I	2	M S B
Geophex	III I	2	M S B.
(a) Giant Disc Amorces	VII 2	9	A.S P.
Glasgow Dynamite	III I	2	M S B.
Glasgow Dynamite (A)	III I	2	M S B.
Gloria Torches	VII 2	9	A.S P.
Gradeley Powder	III 2	4	M S B.
Grancol	III 1	2	M S B.
(d) Granulated Guncotton Powder	III 2	2	M S B.
Granulex	III 1	2	M S B.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Guncotton	III 2	1	M S A
Gunpowder	I	1	M S.A.
Gurite	III 1	2	M S B.
H Attachments	VI 2	10	M S D
Hawkite No 2 " S "	III 2	4	M S B.
Hawkite No 3 " S "	III 2	4	M S.B
Hexachlorethane Smoke Candles	VI 3	11	O.A.S (D)
High Velocity Gelatin	III 1	2	M S B.
(*d*) Husite	III 2	2	M S B
Hydrobel " S "	III 1	2	M S B
Hydrostar Electric Detonators	VI 3	10	M S D
Hydrostar Short Delay Detonators	VI 3	10	M S D
(*e*) Hydrox Igniter No. 1 Safety Electric Fuze	VI 1	6	O A S (C)
Hydrox Initiator Nos. 2, 3 and 4	VI 3	6	O A S
(*e*) Igniter Cord Connectors	VI 1	6	O A.S.
Igniter, Ramjet	VI 2	6	O.A.S
(*e*) Igniters for Grenades	VI 1	6	O.A S (C)
Igniters for Hand Grenades	VI 3	10	M S.D
Igniters for M O C. Cartridges	VI 2	1	M.S.A.
Igniters for M O C. Cartridges (Type 7)	VI 2	1	M S.A.
Igniters for M.O C. Cartridges (Type 12)	VI 2	6	O A S
Igniters for Rocket Motors	VI 2	—	M S.A
Igniters for Thermite Welding Portions	VII 2	9	A.S P.
Igniters, Gunpowder (1st, 2nd and 3rd Definitions)	VI 2	1	M S.A.
Igniters, Gunpowder, Electric	VI 2	6	O A S
Igniters, Percussion (2nd Definition)	VI 3	6	O A S
Igniticap Electric Detonator	VI 3	10	M.S.D.
Igniticap Electric Detonator with H. Attachment	VI 3	10	M.S D.
Ignition Charges, R.M. No. 1	VI 2	1	M.S A.
(*d*) Improved Ballistite	III 1	2	M S B
Incendiary Bombs	VI 3	11	O A.S (D)
Incendiary Shells	VII 2	11	O.A.S (D)
Incendiary Stars	VII 2	11	O.A S (D)
Indicators A/S Training No 1	VII 2	9	A S.P.
Infugel	III 1	2	M S B.
Instantaneous Fuze	VI 2	6	O A S.
Joke Bombs	VII 2	9	A.S P.
Joke Cigarettes	VII 2	9	A S P.
(*e*) Kynoch Fog Signal Caps	VI 1	6	O.A S (C)
(*a*)(*e*) Kynoch No 41a Percussion Cap	VI 1	6	O A S (C)
(*a*)(*e*) Kynoch No 59 Percussion Cap	VI 1	6	O A.S (C)
(*a*)(*e*) Kynoch No 70a Percussion Cap	VI 1	6	O A.S (C)
(*a*)(*e*) Kynoch No 81 Percussion Cap	VI 1	6	O.A.S (C)
(*a*)(*e*) Kynoch No 126 Percussion Cap	VI 1	6	O.A.S (C)

For Notes see end of list.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(a)(e) Kynoch No. 135 Percussion Cap	VI 1	6	O.A.S (C)
(a)(e) Kynoch No. 146 Percussion Cap	VI 1	6	O.A.S (C)
(a)(e) Kynoch No. 148 Percussion Cap	VI 1	6	O.A.S (C)
(a)(e) Kynoch Rail Car Fog Signals	VI 1	6	O.A.S (C)
(l) Lachrymatory Generators	VI 3	13	S.A.S.(D)
(l) Lachrymatory Generators Nos. 1 and 2	VI 3	13	S.A.S (D)
(l) Lachrymatory Generators (Naval)	VI 3	13	S.A.S (D) (R)
Landing Flares	VII 2	9	A.S.P.
Large Gas Producing Charges (Engine Starters)	VI 2	6	O.A.S
(b) Lead Azide	V 2	10	M.S.D.
(c) Lead Di-nitro-resorcinate	V 2	10	M.S.D.
(c) Lead Tri-nitro-resorcinate	V 2	10	M.S.D.
Lesslak	III 1	2	M.S.B.
L.F. Ammonia Dynamite, 40 per cent strength	III 1	2	M.S.B.
L.F. Ammon Gelatine	III 1	2	M.S.B.
L.F. Ammon Gelatine, 90 per cent. strength	III 1	2	M.S.B.
L.F. Blasting Gelatine	III 1	2	M.S.B.
L.F. Detonita	III 1	2	M.S.B.
L.F. Gelatine	III 1	2	M.S.B.
L.F. Gelignite	III 1	2	M.S.B.
L.F. Geobel	III 1	2	M.S.B.
L.F. Geobel No. 2	III 1	2	M.S.B.
Life-boat Parachute Signal Rockets	VII 2	9	A.S.P.
L.G. Gelatine	III 1	2	M.S.B.
(d) Light Load Smokeless	III 2	2	M.S.B.
Lightning Paper	VII 2	9	A.S.P.
Lodensite	III 1	2	M.S.B.
Lodensite No. 2	III 1	2	M.S.B.
Lodespex	III 1	2	M.S.B.
Lump-Kol Pellet Powder	II	1	M.S.A.
Machine Gun Simulators	VI 3	10	M.S.D.
Magnesium Torches	VII 2	9	A.S.P.
Manufactured Fireworks	VII 2	9	A.S.P.
Markers, Marine No. 4, Mark I	VII 2	11	O.A.S.(D)
(d) M.C. Smokeless Powder	III 2	2	M.S.B.
(d) Mechanite	III 1	2	M.S.B.
Military Ammonal	III 2	4	M.S.B.
Military Burrowite	III 2	4	M.S.B.
Military Delay Detonators	VI 3	10	M.S.D.
Military Detonators	VI 3	10	M.S.D.
Miners' Portfires	VI 2	9	O.A.S.
Miners' Squibs	VI 2	6	O.A.S.
Minespex	III 1	2	M.S.B.
Minex "S"	III 1	2	M.S.B.
(a)(e) M.O.C. Cartridges (Type 1)	VI 1	6	O.A.S (C)
M.O.C. Cartridges (Type 2)	VI 2	6	O.A.S.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
M O C Cartridges (Type 3)	VI 3	6	O A S
(a)(e) M O C Cartridges (Type 4)	VI 1	6	O A S (C)
(e) M O C Cartridges (Type 5)	VI 1	6	O A S.
(a)(e) M O C. Cartridges (Type 6)	VI 1	6	O A S (C)
M O C Cartridges (Type 7)	VI 2	6	O A S
(a)(e) M O C Cartridges (Type 9)	VI 1	6	O.A S
M O C Cartridges (Type 10)	VI 2	6	O A S
M O.C Cartridges (Type 11)	VI 2	6	O A.S
M O C Cartridges (Type 12)	VI 2	6	O A.S
(e) M.O C Cartridge Cases (Empty) Fuzed or Capped	VI 1	6	O.A S (C)
(d) Modified E.C Powder	III 2	2	M S B.
(d) Modified Neodisc	III 2	2	M S B
(d) Modified Neoflak	III 2	2	M S B
(d) Modified Smokeless Diamond	III 2	2	M S.B.
Monobel No 1	III 1	2	M S B
Morcol	III 1	2	M S B
Mortar Parachute Signals	VII 2	9	A.S P
Multiple Detonators, Type V	VI 3	10	M S.D
(d) M.X. Powder	III 1	2	M S.B
(d) N C. (Y)	III 2	2	M.S B
Neobel	III 1	2	M.S.B
(d) Neodisc	III 2	2	M.S B

For Notes see end of list.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(d) Neoflak	III 2	2	M S B
(d) Nitrated Guncotton	III 2	2	M S B
Nitrocellulose	III 2	1	M S A
(d) Nitrocellulose Cannon Powder	III 2	2	M.S B.
(d) Nitrocellulose Rifle Powder	III 2	2	M S B.
Nitro-Cotton	III 2	1	M S A
Nitroguanidine	III 2	4	M.S B.
(j) Nitromethane	III 2	1	U.C.S.
Nitropolystyrene	III 2	4	M.S B
Nitrovene	III 2	4	M.S B
(a)(e) No 41 Percussion Cap	VI 1	6	O A S (C)
No 2 Smoke Floats	VI 2	11	O.A S (D)
(d) Nobel Acurex Powder	III 2	2	M S.B
(d) Nobel Acurim Neonite	III 2	2	M S.B
(d) Nobel Acurim Neonite No 2	III 2	2	M S.B.
(d) Nobel Cadet Neonite	III 2	2	M S.B
(d) Nobel C.K. Powder No. 1	III 1	2	M S.B
(d) Nobel C K. Powder No 2	III 1	2	M S B
(d) Nobel Cordite	III 1	2	M S B.
(d) Nobel Cordite No 2	III 1	2	M.S B
Nobel Fuze Heads No 15	VI 2	6	O.A.S.
(d) Nobel Glasgow Shotgun Powder	III 1	2	M S B.
(d) Nobel Hornet Powder	III 1	2	M.S.B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para 21 of Section 1)
(*d*) Nobel Igniter Powder	III 1	2	M S B
(*d*) Nobel Nitro-cellulose Powder	III 2	2	M S B
(*d*) Nobel Nitro-cellulose Powder No 1	III 2	2	M.S B
(*d*) Nobel Parabellum Powder	III 1	2	M S B
(*d*) Nobel P G Powder	III 2	2	M S.B
(*d*) Nobel Powder No 52	III 1	2	M.S.B
(*d*) Nobel Revolver Neonite	III 2	2	M S.B
(*d*) Nobel Rifle Neonite	III 2	2	M S B
(*d*) Nobel Rimfire Powder	III 1	2	M S B
(*d*) Nobel Rim Neonite	III 2	2	M S B
Nobel Seismic Booster	VI 2	4	O.A S
Nobel Shaped Charge	VI 2	7	O A.S
(*d*) Nobel Shotgun Neonite	III 2	2	M S B
(*d*) Nobel Shotgun Powder	III 1	2	M S B
(*d*) Nobel Superim Powder	III 1	2	M S B
Nobelite	II	4	M S B
Nobelite H	II	4	M S B
Nobelite Primer	III 1	2	M S B.
Nobel's Composite Explosive No 966	III 1	2	M S B
(*b*) Nobel's Delay Composition R 885	V 2	10	M S D
Nobel's Delay Composition R 894	II	1	M S.A.
Nobel's Delay Composition R 998	III 2	1	M S.A
(*b*) Nobel's Delay Composition R 1006	V 2	10	M S D
(*b*) Nobel's Delay Composition R.1149	V 2	10	M S D.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para 21 of Section 1)
Nobel's Electric Delay Action Detonators	VI 3	10	M S D
Nobel's Electric Delay Fuzes	VI 2	6	O.A S
(*e*) Nobel's Electric Delay Action Fuzes	VI 1	6	O.A S (C)
Nobel's Electric Delay Powder Fuzes	VI 2	6	O.A.S.
Nobel's Explosive No 256	IV 2	1	M S.A
Nobel's Explosive No 536	III 1	2	M.S B
Nobel's Explosive No. 549	III 1	2	M S B.
Nobel's Explosive No 568	III 1	2	M.S B.
Nobel's Explosive No. 649A	III 1	2	M S B.
Nobel's Explosive No 649B	III 1	2	M S.B.
Nobel's Explosive No. 673	III 1	2	M S B.
Nobel's Explosive No. 695	III 1	2	M S.B.
Nobel's Explosive No 695A	III 1	2	M S.B.
Nobel's Explosive No 704	III 2	4	M S B.
Nobel's Explosive No. 704B	III 2	4	M S.B
Nobel's Explosive No 808	III 1	2	M S.B.
Nobel's Explosive No 809	III 1	2	M S B
Nobel's Explosive No 831	III 2	4	M S B
Nobel's Explosive No 847	III 1	2	M.S B
Nobel's Explosive No 850	III 2	4	M S B.
Nobel's Explosive No 852	III 2	4	M S B.
Nobel's Explosive No 857	III 2	4	M S B
Nobel's Explosive No 880	III 2	4	M S B
Nobel's Explosive No 881	III 2	4	M S B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
Nobel's Explosive No 882	III 2	4	M S B
Nobel's Explosive No 883	III 2	4	M S.B
Nobel's Explosive No 884	III 2	4	M.S.B
Nobel's Explosive No 887	III 1	2	M S B
Nobel's Explosive No 894	III 2	4	M S B
Nobel's Explosive No. 896	III 2	4	M S B
Nobel's Explosive No 898	III 1	2	M S B
Nobel's Explosive No 901	III 1	2	M S.B
Nobel's Explosive No 906	III 1	2	M S B
Nobel's Explosive No 907	III 1	2	M S B
Nobel's Explosive No 916	III 1	2	M S B
Nobel's Explosive No 919	III 2	4	M S B
Nobel's Explosive No 920	III 2	4	M S B
Nobel's Explosive No 924	III 1	2	M S B
Nobel's Explosive No 937	III 1	2	M S B
Nobel's Explosive No. 944	III 1	2	M S B
Nobel's Explosive No 945	III 2	4	M S.B.
Nobel's Explosive No 964	III 1	2	M S B
Nobel's Explosive No. 968	III 1	2	M.S B
Nobel's Explosive No 999	II	4	M S B
Nobel's Explosive No 1000	III 2	4	M S B
Nobel's Explosive No. 1001	III 1	2	M S B
Nobel's Explosive No 1066	III 1	2	M S.B

For Notes see end of list

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No)	Stowage Conditions (See para 21 of Section 1)
(d) Nobel's Explosive No 1091	III 1	2	M S B
Nobel's Explosive No 1105	III 1	2	M S.B
Nobel's Explosive No. 1157	III 2	4	M S B
Nobel's Explosive No 1177	III 2	4	M S.B
Nobel's Explosive No 1181	III 1	2	M S.B
(d) Nobel's Explosive No 1182	III 1	2	M S.B
Nobel's Explosive No 1186	III 1	2	M S.B
Nobel's Explosive No 1200	III 1	2	M S B
Nobel's Explosive No 1201	III 1	2	M S B
Nobel's Explosive No 1213	III 1	2	M S B
Nobel's Explosive No 1235	III 1	2	M S.B
Nobel's Explosive No 1243	II	4	M.S B
Nobel's Explosive No 1244	III 2	4	M S.B
Nobel's Explosive No 1245	III 2	4	M S B
Nobel's Explosive No 1257	III 1	2	M S B
Nobel's Explosive No 1258	III 1	2	M S B
Nobel's Explosive No 1263	III 1	2	M S B
Nobel's Explosive No. 1267	II	4	M S.B
Nobel's Explosive No 1268	III 2	4	M S B
Nobel's Explosive No 1271	II	4	M S B
Nobel's Explosive No 1274	III 1	2	M S B
Nobel's Explosive No 1279	III 2	4	M S B
Nobel's Explosive No 1281	II	4	M S B
Nobel's Explosive No 1284	II	4	M S B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Nobel's Explosive No. 1285	III 1	2	M S B
Nobel's Explosive No. 1286	III 1	2	M S B
Nobel's Explosive No. 1289	III 2	4	M S.B
Nobel's Explosive No. 1300	III 1	2	M S.B
Nobel's Flash Cartridge	VII 2	9	A S.P.
Nobel's No. 48	III 2	4	M S.B.
Nobel's No. 49	III 2	4	M.S.B
Nobel's No. 50	III 2	4	M.S B
Nobel's No. 51	III 2	4	M.S B
Nobel's No. 51A	III 2	4	M.S B
Nobel's Primers	VI 2	6	O.A.S
(*e*) Nobel's Safety Electric Fuzes	VI 1	6	O.A.S (C)
(*a*)(*e*) Nobel's Safety Electric Delay Fuze	VI 1	6	O.A.S (C)
N S Gelatine Dynamite	III 1	2	M.S B
N S Gelignite	III 1	2	M S B
Oakley Explosives, Nos. 561, 563 and 564	III 1	2	M S B
Opencast Celmonal	III 2	4	M S.B
Opencast Gelignite	III 1	2	M S.B
Opencast Gelignite M	III 1	2	M.S.B
Opencast Gelignite Q	III 1	2	M.S.B
Oven Blowers	VI 2	1	M.S.A.
Palfume Azobenzene Generator	VII 2	11	O.A.S.(D)
Palfume D.D.T. Generator	VII 2	11	O.A.S (D)
Parachute Cartridges	VII 2	9	A S P
Paradyn	III 1	2	M S B
Parafog Insecticidal Smoke Generators	VII 2	11	O A S (D)
Paragex	III 1	2	M S B.
P E, P E No. 2, P E No. 3, P E No. 3A	III 2	4	M.S B
Pencol	III 1	2	M S B.
(*g*) Penta-erythritol-tetranitrate (P E T N)	III 2	4	M S B
P E T.N. Boosters	VI 2	6	O.A.S.
Pentolite	III 2	4	M S B.
Pentregel	III 1	2	M.S B
Pentrox	III 1	2	M S B
Percussion Boosters	VI 3	10	M S D.
(*e*)(*m*) Percussion Caps O. in C. No. 1	VI 1	6	O.A.S.(C)
Percussion Detonators for Boosters	VI 3	10	M S.D
Percussion Primers	VI 3	6	O.A.S
Photographic Flashes (1st and 2nd Definitions)	VII 2	9	A S P.
Picrate of Ammonium	III 2	1	M.S.A (L)
Picrate of Sodium	III 2	1	M.S.A.(L)
(*i*) Picric Acid	III 2	4	M S.B (L)
Picric Powder	III 2	1	M S.A (L)
Picrite	III 2	4	M S.B.
Pitespex	III 1	2	M.S.B.
Plaster Gelatine	III 1	2	M S.B
Plastex No. 1 "S"	III 1	2	M S.B

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para 21 of Section 1)
Plastic Core Composition	III 2	1	M.S A
Plastic Core Fuze for Fireworks	VI 2	6	O.A S.
(e) Plastic Core Safety Fuze	VI 1	6	O.A.S (C)
Plastic Igniter Cord	VI 2	6	O.A S.
Plastic Igniter Wick	VI 2	6	O A.S.
Plastic Initiator for Smoke Generators	VI 2	6	O.A S.
Plastic 808	III 1	2	M S B
Plastrite	III 1	2	M S B
Polar Ajax " S "	III 1	2	M S B
Polar Ajax " C " (S)	III 1	2	M S B
Polar Ammon Gelatine Dynamite	III 1	2	M S B
Polar Ammon Gelignite	III 1	2	M S B
Polar A N. Gelatine Dynamite	III 1	2	M S B
Polar A N Gelignite	III 1	2	M S B
Polar A.2 Monobel " S "	III 1	2	M S B
Polar A.3 Monobel " S "	III 1	2	M.S B
Polar Blasting Gelatine	III 1	2	M.S B
Polar Blasting Gelatine (P)	III 1	2	M.S B
Polar Blasting Gelatine, Type 1, 92% N.G	III 1	2	M S.B.
Polar Blasting Gelatine, Type 2, 82% N G.	III 1	2	M.S.B.
Polar Gelatine	III 1	2	M.S.B.
Polar Gelatine Dynamite	III 1	2	M.S.B
Polar Gelignite No 2	III 1	2	M S.B
Polar Geobel	III 1	2	M.S.B
Polar Geobel No 2	III 1	2	M.S.B
Polar Geobel No 3	III 1	2	M S B
Polar N S Gelatine Dynamite	III 1	2	M S B
Polar N.S Gelignite	III 1	2	M.S B
Polar N S Gelignite No. 2	III 1	2	M S B
Polar Rockite	III 1	2	M.S.B.
Polar S N Gelatine Dynamite	III 1	2	M S B.
Polar S N Gelignite	III 1	2	M S B.
Polar Viking " S "	III 1	2	M S B
(i) Potassium Di-nitro-phenate	III 2	1	M.S A (L)
(d) Powder, 81 mm.	III 1	2	M S B
(d) Premier Powder	III 2	2	M S B
Pressed Rocket Charges No 1	VI 2	3	M S B
Pressed Rocket Charges No. 2	VI 2	6	O A.S.
Pressed Rocket Motors No 1	VI 2	6 (boxed) 8 (loose)	O.A.S
Pressed Rocket Motors No 2	VI 2	6	O.A.S.
Primed Cambric	VI 2	6	O.A.S.
Puffer Capsules, R M No 1	VI 2	6	O.A.S.
Q.F. Ammunition	VI 3	6	O.A.S.
Quarry Antislak	III 1	2	M.S.B.
Quarry Gelammonite	III 1	2	M S B.

For Notes see end of list.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Quarry Monobel	III 1	2	M.S B.
Quarry Plastex	III 1	2	M S B
Quickmatch	VI 2	1	O.A.S
(*e*) Railway Fog Signals, O. in C. No. 1	VI 1	6	O.A.S (C)
R.D. 1031	III 2	4	M S B
R.D. Composition 202	II	1	M S A
R.D.X.—B.W.X.	III 2	4	M S B
R.D X.—T N.T.	III 2	4	M S B.
Reconnaissance Flares	VII 2	9	A S P
16 oz. Regulation Distress Rocket	VII 2	9	A.S.P
Relay Detonators	VI 3	10	M S D.
(*d*) Remington Smokeless Powder	III 2	2	M S B
Rex Burrowite	III 2	4	M S B.
Rifle Signal Grenades	VII 2	9	A.S.P
Rocket Motor Charges	VII 2	6	O A S
Rockets 3·5 in. H.E. Anti-Tank Practice	VI 2	8	O A S (C)
Rockite	III 1	2	M S.B
Rokitol	III 1	2	M S B
Rokrift Powder	III 1	2	M S B.
Sabulite No. 1 (A)	III 2	4	M S.B.
Sabulite No. 1 (A) (Modified)	III 2	4	M S B.
(*e*) Safety Cartridges	VI 1	6	O.A.S.(C)
(*e*) Safety Cartridge Cases (Empty), Capped	VI 1	6	O A.S (C)
(*e*) Safety Cartridge Cases (Empty), Primed	VI 1	6	O.A.S (C)
(*e*) Safety Electric Fuzes	VI 1	6	O.A.S (C)
(*e*) Safety Firing Tubes No. 1	VI 1	6	O.A.S (C)
(*e*) Safety Fuze O. in C. No. 1	VI 1	6	O.A.S (C)
(*e*) Safety Instantaneous Fuze	VI 1	6	O A.S (C)
Samsonite No. 3	III 1	2	M.S.B
Saxonite " S "	III 1	2	M.S.B
(*d*) S.B. Casting Powder	III 2	2	M.S.B
(*d*) S B.C. Casting Powder	III 2	2	M.S.B
S B H. Casting Powder	III 2	2	M.S.B
S.B.M. Casting Powder	III 2	2	M S B
(*a*)(*e*) Schermer Cattle Killer Cartridges	VI 1	6	O A.S (C)
(*d*) Schultze Gunpowder	III 2	2	M S.B
Seismex	III 2	4	M S.B.
Seismex Primer	III 2	4	M.S.B.
Seismic Electric Detonators	VI 3	10	M.S.D.
Seismic Gelatine	III 1	2	M S.B
Shaped Charges	VI 2	4	M S.B
Sheathed Cordtex	VI 2	8	O.A.S
Ships' Line Throwing Rockets	VII 2	9	A.S.P
Ships' Parachute Signal Rockets	VII 2	9	A.S P.
Short Delay Detonators	VI 3	10	M S D
Signal Grenades (Naval)	VII 2	9	A.S.P
Signal, Multi-Star	VII 2	9	A.S P

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
Silver Picrate	III 2	1	M S.L.
Simex	III 1	2	M S B
Simex No 3 " S "	III 1	2	M S B
Simulators M.F A/B No. 1	VI 3	10	M.S.D.
Simulators M.G A/B No 1	VI 3	10	M S D.
Simulators R.F A/B No 1	VI 3	10	M.S D.
Slow Burning Primers	VI 3	6	O.A.S
S M. and A. Cartridges	VI 3	6	O.A.S.
(*a*)(*e*) Small Calibre Tracer Bullets	VI 1	6	O.A.S
Smoke Bombs	VI 3	11	O.A.S (D)
Smoke Float Igniters	VI 3	9	A S P
Smoke Generators	VI 3	11	O A S (D)
Smoke Grenades	VI 3	11	O A S (D)
Smoke Signals	VI 3	11	O A S (D)
(*d*) Smokeless Diamond	III 2	2	M S B
(*d*) Smokeless Diamond Powder No 2	III 2	2	M S B.
(*d*) Smokeless Powder Greenbat	III 2	2	M S B.
(*d*) Smokeless Powder Greenbat No 1	III 2	2	M.S B
S.N Gelatine Dynamite	III 1	2	M S B.
S.N Gelignite	III 1	2	M S B.
Snaps for Bon-bon Crackers	VII 2	9	A.S P
Socket Distress Signals	VII 2	9	A S.P.
Socket Light Signals	VII 2	9	A.S P.
Socket Sound Signals	VII 2	9	A S P
Socket Sound and Smoke Signals	VII 2	9	A S P
Sodium Picrate	III 2	1	M S A.(L)
Sound Signal Rockets	VII 2	9	A.S P
Special Gelatine	III 1	2	M S B.
Special Gelatine (A)	III 1	2	M S B
Special Gelignite 62 per cent.	III 1	2	M S.B.
Special Opencast Gelignite	III 1	2	M.S B.
(*e*) Special Safety Fuze	VI 1	6	O.A.S (C)
(*d*) Sporting Ballistite	III 1	2	M S B.
S R.C. 2	II	1	M S A
Star Shells	VII 2	9	A.S.P.
Steam Generators	VII 2	9	A.S.P.
Stonobel " S "	III 1	2	M S B.
Stooks	VI 2	7	O A.S.
(*e*) Striker Pin Fuzes	VI 1	6	O A S.(C)
Submarine Blasting Gelatine	III 1	2	M.S.B
Sunderite	III 2	4	M.S B
Super Ajax	III 1	2	M S B
Super Ammodyne	III 1	2	M S B
Swiftrain Powder	II	1	M S A.
Switch, Time-Pencil	VI 3	6	O.A.S.
Tetra-nitro-aniline	III 2	1	M S A
Tetra-nitro-methyl-aniline (" Tetryl ")	III 2	1	M S.A

For Notes see end of list.

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section 1)
(*c*) Tetrazene	V 2	10	M.S.D
Thameite No. 1	III 2	4	M.S.B
Thameite Grain No. 1	III 2	4	M.S.B
Thameite No. 2	III 2	4	M.S.B
Thameite Grain No. 2	III 2	4	M.S.B.
Thameite No. 3	III 2	4	M.S.B.
Thameite Grain No. 3	III 2	4	M.S.B
Thameite No. 4	III 2	4	M.S.B
Thameite Grain No. 4	III 2	4	M.S.B.
Thameite No. 5	III 2	4	M.S.B
Thameite Grain No. 5	III 2	4	M.S.B
Thameite No. 6	III 2	4	M.S.B.
Thameite Grain No. 6	III 2	4	M.S.B
Theatrical Jets	VII 2	9	A.S.P
Thermite Igniters	VII 2	9	A.S.P
Throwdowns	VII 2	9	A.S.P
16 oz. Thunderflash Rockets	VII 2	9	A.S.P
Tolumite No. 1	III 2	4	M.S.B
(*d*) Tonite or Cotton Powder No. 1	III 2	2	M.S.B
(*d*) Tonite or Cotton Powder No. 2	III 2	2	M.S.B
(*d*) Tonite No. 3	III 2	2	M.S.B
Torpex	III 2	4	M.S.B
(*a*) Toy Balloons	VII 2	9	A.S.P
Tracer and Igniter Shell No. 10	VII 2	9	A.S.P
Tracer Bullets	VII 2	9	A.S.P.
Tracers (1st, 2nd, 3rd and 4th Definitions)	VII 2	9	A.S.P
Tracer Shells	VII 2	9	A.S.P
Trinite No. 1	III 2	4	M.S.B
Trinite " W "	III 2	4	M.S.B
(*f*) Tri-nitro-resorcinol (Styphnic acid)	III 2	1	M.S.A.(L)
Tri-nitro-toluene (" T.N.T.")	III 2	4	M.S.B.
(*e*) Trip Fuzes	VI 1	6	O.A.S (C)
Tubes for Firing Explosives	VI 2 & 3	6	O.A.S
Tubes, Tracers for Q.F. Ammunition	VI 1	9	A.S.P.
Tunnelite	III 1	2	M.S.B.
(*e*) Turbo-Starter Primers, Electrically Fired, 15 grain	VI 1	6	O.A.S (C)
Unibel	III 1	2	M.S.B
Unifrax	III 1	2	M.S.B.
Unigel	III 1	2	M.S.B
Unigex	III 1	2	M.S.B
Unikol	III 1	2	M.S.B
Unirend	III 2	4	M.S.B.
Unisax	III 1	2	M.S.B
Very Signal Cartridges	VII 2	9	A.S.P
Vesta Fuzeheads	VI 2	6	O.A.S
Vicarite	III 2	4	M.S.B
(*a*)(*e*) Vickers' Percussion Caps	VI 1	6	O.A.S (C)

Explosive	Class and Division (Explosives Act)	Equivalent Service Classification (Group No.)	Stowage Conditions (See para. 21 of Section I)
Victor Powder M	III 1	2	M.S.B.
Viscorim	III 1	2	M.S.A.
Vistex Nos. 1, 2, 3 and 4	III 2	4	M.S.B.
(e) Vulcan Patent Electric Delay Action Fuzes	VI 1	6	O.A.S.(C)
Wet Guncotton (see Guncotton)	III 2	4	M.S.B.
Wind Direction Smoke Bombs	VI 3	11	O.A.S.(D)
Winrox	III 1	2	M.S.B.
XL-Hawkite "S"	III 2	4	M.S.B.

Notes—

(a) This explosive is authorised for transport only when packed in a particular manner.

(b) This explosive is authorised for transport only under a Special Packing Authority.

(c) This explosive is authorised for transport only when wetted with water and packed in a particular manner.

(d) This explosive becomes Group I with stowage conditions M.S.A. if it is not packed in an airtight metallic container (luting sealed containers are excluded).

(e) May also be O.A.S.(D) subject to paragraph 8 on page 8.

(f) This explosive must be wetted with not less than 20 per cent. of water calculated on the wet material.

(g) This explosive must be wetted with not less than 25 per cent. of water calculated on the wet material.

(h) When containing 15 per cent. of water, calculated on the wet material, is not explosive.

(i) When containing 33⅓ per cent. of water, calculated on the wet material, is not explosive.

(j) Is an explosive only when confined. The word "confined" means contained in a pressure vessel and not in the ordinary container used for conveyance.

(k) In any Licence the expression "Electric Fuzes" also includes all Safety Electric Fuzes of Class VI, Division 1.

(l) Not for general sale.

(m) See Notes on page 24.

SPECIFICATION FOR THE CONSTRUCTION OF MAGAZINES

1. The following rules (subject to paragraph 58 of this Sub-section) are to be observed in the construction of magazines required by Sub-sections A to C of this Section and supersede all previous rules.

2. *Position*—Magazines may be fitted in any part of the ship conforming with the conditions laid down in paragraphs 17 to 22 and paragraph 25 of Sub-section A, but they must be so placed that their doors are easily accessible from a hatchway.

3. *Materials*—Except where otherwise specified in these rules, magazines are to be constructed of wood, using clean unimpregnated timber. Timber sizes given below are for general guidance only and the use of other sizes, depending on material available, is not precluded. For instance the use of 4-inch by 2-inch uprights in lieu of 3-inch by 3-inch and of 1-inch boards in lieu of 1½-inch is at present authorised by the Ministry of Transport. Nails used for fastening timber are to be of galvanised iron or non-ferrous material.

4. *Magazine Type A.*—This type of magazine is required for stowage of explosives denoted by the letters M S A. in Sub-sections B and C.

5. The magazine is to be a space of the required size, normally in 'tween deck or shelter deck, enclosed by partitions constructed of 1½-inch close fitting boards secured internally to 3-inch by 3-inch uprights spaced 2 feet apart running from deck to deck and firmly secured top and bottom. When the height of the deck exceeds 8 feet uprights should be spaced not more than 18 inches apart. When built on steel or iron decks the heels of the uprights are to be stepped on and secured to a board 1 inch thick laid on the deck.

6. The boarding of these partitions is to run from upright to upright on the inside of the magazine extending from deck to deck and fitting closely between the beams and to be fastened securely by 3-inch nails, three to each board on each upright.

7. Boards 9-inch by 1½-inch to be securely fastened to the outside of the uprights at the upper and lower ends for securing heads of shores when required. The space formed between the lower board and the partition boards is to be filled in.

8. The ship's sides and hold bulkheads may be used as the sides of the magazine provided they are battened. The battens are to be not less than 3 × 1½ inches with intervals between of not more than 6 inches, measured edge to edge, and extending up to the beams. Where battens are already fitted in a ship and do not give this maximum interval they must be augmented to do so.

9. The flooring of magazines of this category is to consist of close fitting 1½-inch board secured over 3-inch by 2-inch bearers spaced 18 inches apart.

10. All pillars, stanchions, ventilator shafts and all other iron work in the magazines are to be battened as for the ship's sides or hold bulkheads in paragraph 8 above, with wood or other suitable material.

11. The deckhead need not be lined or battened but care is to be taken that the beams and underside of deck are well painted and are free from rust, scale and loose paint.

12. One or more doorways according to the size of the magazine (see diagram showing details of construction, Plate IIA) at least 4 feet wide, are to be fitted in the side of the magazine facing the hatchway with a 3-inch by 3-inch cant piece fitted and secured, at the lower part to form a sill for the full width of the doorway, the top edge being 1 inch above the bottom boards. The framing of the doorway should leave a 1½-inch rabbet on the inside of the magazine, formed by the uprights and the lining. An additional thickness of 2 inches is to be secured to the uprights on each side of the doorway to a height of 2 feet 6 inches for the lower part of the door to run on, these additional pieces to be shaped off (i.e. sloped away) from front to back for a distance of 6 inches down from the top.

13. The door may be made in one or two parts. If of two parts, the door is to be formed of two thicknesses of 1½-inch boards, the lower part to be 3 feet in height and to be shipped from the inside, the upper part to be of such height as is necessary and to be shipped from the outside. The boards forming the upper part of the door are to be well fastened together crossway by nails, having their points turned on the inside and punched in, the inner boards to fit the width of the doorway and to extend 5 inches beyond the upper edge of the outer boards and 2 inches beyond the lower edge. Both ends of the outer boards are to extend 3 inches beyond the sides of the inner boards forming reverse rabbets.

14. The boards forming the lower part are to be secured to and kept 3 inches apart by scantling 3 inches by 3 inches extending from 1 inch above the bottom to within 2 inches of the top and placed 2½ inches in from each end of the outer boards, the length of the outer boards to be of the width of the doorway and the inner boards to extend 1½ inches beyond the outer boards at each end.

15. Two hand-holes for lifting purposes are to be cut through both the inner boards of the lower part and the outer boards of the upper part. When both parts of the door are in place the space between the top of the upper part and the lower edge of the shoring board is to be filled in with a 1½-inch board securely fastened to the uprights.

16. A 3-inch by 3-inch stanchion is to be securely wedged between deck at the middle of the door and tommed off to prevent shifting. The section of this stanchion should be increased as necessary if heavy packages are stowed in the magazine.

17. If a one-piece door is fitted it is to be of similar construction and fitting to the upper door section referred to above. Where insulated spaces are used as magazines the hinged insulated doors should be utilised.

18. *Magazine Type B.*—This type of magazine is required for the stowage of explosives denoted by the letters M S B in Sub-sections B and C.

19. The magazine is to be similar in construction to Magazine Type A except that battening of the ship's sides or hold bulkheads when used as the sides of the magazine is not required. Likewise the battening of ironwork etc., as given in paragraph 10 for the Type A is not required.

20. The flooring of this category of magazines is to consist of sparred gratings constructed of 3-inch by 1-inch spars spaced 3 inches apart nailed to 3-inch by 1-inch cross spars of bearers spaced 12 inches apart. These gratings are to be portable to allow access for cleaning and in sections of a size suitable for passing through the doorway.

21. *M S D Type Magazine.*—This type of magazine is required for the stowage of explosives denoted by the letters M S D in Sub-sections B and C.

22. A magazine of this category is to be constructed in a similar manner to that prescribed above for Magazine Type B, except that it must be placed at least 8 feet from the ship's side.

23. *Fixed Magazines on Cargo.*—When it is necessary to build a magazine of Types A, B or D on cargo, under the provisions of paragraph 17(*g*), the selected place is to be levelled and the floor formed of 3-inch by 3-inch quartering placed 2 feet apart and covered with close fitted 1½-inch boards securely nailed. Uprights 3 inches square, 2 feet apart, are to be run from the boards to the deck above, to fit tight and be well driven in, cleated at the bottom and well tommed off at the top

24. The remainder of the magazine is to be constructed as specified above for a magazine Type A, B or D

25. *Portable Magazine.*—This may be used in lieu of a fixed magazine for explosives denoted by the letters M S A., M S B. or M S D. in Sub-sections B and C, but the capacity must not exceed 2½ tons measurement. Portable magazines are normally constructed as given in paragraph 26 but collapsible steel containers are useful for coastwise conveyances and types are approved by the Ministry of Transport. When used as M S A. type magazines they must be battened internally and floored to conform to paragraphs 8 and 9

26. A portable magazine is to be made to the size required in accordance with the dimensions of the packages to be stowed therein and consists of a frame, made of 3-inch by 2-inch quartering floored and boarded up on the inside with 1¼-inch boarding with a similar top and lid fitted with cleats on the inside to keep it in its place when shipped.

27. Portable magazines when stowed must be securely chocked off and if containing detonators must be stowed at least 8 feet from the ship's side

28. *Locking.*—Magazines of all types are to be secured by strong padlocks of the Yale type, with hasps and staples of metal or galvanised iron.

In the case of portable magazines efficient locking is to be effected by a locking plank placed across the movable portion of the lid and secured by padlocks of the Yale type to staples in the fixed portions of the magazines, these staples being clinched over on the inside to ensure that they cannot be prized off.

29. *Ventilation.*—Fixed magazines are to be efficiently ventilated, but any deck ventilator leading into the magazine is to have double fine mesh wire gauze guards fitted in the ventilator coaming, or otherwise be fitted with a fireproof cowl or other efficient fireproof covering.

Compartments in which a portable magazine is stowed are also to be efficiently ventilated and ventilators protected as above.

30. *Shoring and Securing.*—Magazines, when not blocked off at the sides by other cargo, are to be efficiently tommed off. When a magazine measures athwartships more than 40 feet, a fore and aft bulkhead must be fitted on the centre line to facilitate blocking off packages in the magazine. This bulkhead is to be constructed of 3-inch by 3-inch uprights 3 feet apart extending from deck to deck, secured top and bottom as for side partitions and lined up with 1-inch boarding not more than 6 inches apart placed alternately on either side of the uprights. The ship's permanent stanchions may be used in lieu of temporary uprights when they are suitably placed and not more than 6 feet apart.

31. *Permanent Magazines.*—When necessary to fit a permanent cargo magazine in a ship, this may be constructed of iron or steel but in this case the whole of the interior is to be thoroughly protected by paint, varnish, galvanising or other suitable coating and also battened with wood as given in paragraph 8 of this Sub-section if it is to be available for explosives requiring M.S A. stowage conditions. To avoid contamination when used for freight the floors may be covered with composition approved by the Ministry of Transport. Woodwork in iron or steel magazines must be painted or varnished to prevent absorption of oils etc., and all cracks must be sealed to prevent accumulation of hazardous materials. If a magazine of wood construction is used the inside of the walls will be lined with hardboard or similar material which will be sealed at the joints and painted or varnished. Lead based paint must not be used for painting the interior of a permanent magazine

32. *S A.S. Special Magazine.*—This type (see Plate 1) is required for the stowage of explosives belonging to Groups 11 or 13 and denoted by the letters S A S. in Sub-sections B and C. (See paragraphs 39 to 45 for the Group 12 type.)

33. See paragraph 25(g) of Sub-section A for details regarding the position of the magazine

34. The magazine is to be an enclosure of the required size constructed of 3-inch by 3-inch uprights spaced 2 feet apart running from deck to deck and lined internally with two thicknesses of ¾-inch boarding with a layer of unbleached calico worked between. The ¾-inch boarding is to be worked horizontally, close fitting and with the edges breaking joint as shown in Plate I. The deckhead is to be similarly lined, the boarding being fitted on the underside of the beams. A wood deck should not be used, nor, if it can be avoided, a wood sheathed deck.

35. The uprights are to be stepped on 1-inch planking well bedded in glazier's putty and firmly secured top and bottom, 1½-inch by 1½-inch boards being securely fastened on the outside at the upper and lower ends for securing heads of shores when required. A cement fillet at least 6 inches in height is to be worked round the whole of the inside of the magazine where the sides take on the deck. The cement should if possible be treated with sodium silicate (water-glass) when partly dry or alternatively a waterproof type of cement may be used.

36. A doorway 4 feet wide and 5 feet high is to be fitted in the side of the magazine facing the hatchway, the bottom of the doorway being at least 1 foot above the level of the deck. The door is to be hinged, opening outwards and constructed of a substantial framework with lining similar to that used for the walls of the magazine. The edges of the door and doorway frame are to be made so as to form a plug joint and should be lined with good quality felt. Securing arrangements are to consist of three butterfly nuts fitted to the doorway frame to take on appropriate fittings on the top, bottom and side of the door (see details in Plate I).

37. The 'tween deck space must be sealed off in accordance with paragraph 25(*i*) of Sub-section A

38. When Group 13 explosives charged with G.1 or G.10 are stowed in such magazines a 3-inch ventilating pipe is to be let into the deckhead, through the lining and into the magazine. It must extend through the level of the uppermost habitated part of the ship.

39. *S A S. Group 12 magazine.*—This type of magazine is required for the stowage of Group 12 explosives denoted by the letters S A S. in Sub-sections B and C.

40 See paragraph 25(g) of Sub-section A for details regarding the position of the magazine.

41. The magazine is to consist of a sparred partition extending from deck to deck which must not be erected on a wood deck or a wood sheathed deck The partition to be constructed of 6-inch by 2-inch horizontal spars spaced 6 inches apart (measured edge to edge) secured internally to 3-inch by 3-inch uprights spaced 18 inches apart and firmly secured at top and bottom

42 The deck head over the enclosure is to be lined with 1-inch boarding spaced not more than 9 inches apart. A doorway at least 4 feet wide is to be fitted facing the hatchway, with hinged door opening outwards, constructed of vertical 6-inch by 2-inch sparring and suitable cross pieces Wood cross bars shipping in crutches fitted to the outside of the adjacent uprights are to be fitted for securing the door when closed.

43 The whole of the interior of the magazine, with the exception of the deck, is to be lined with close fitting panels of asbestos wood securely nailed to the framework of the magazine, the joints being covered by fillets 2 inches wide All joints, cracks, and nail holes must be filled with glazier's putty and the lower edges at the deck embedded in a ridge of good quality cement at least 6 inches high. A suitable size panel is to be made for sealing the doorway aperture of lining. The cement should if possible be treated with sodium silicate (water glass) when partly dry or, alternatively, a waterproof type of cement may be used.

44 The interior of the lining is to be coated with two good coats of one of the paints or varnish approved for the purpose by the Ministry of Transport.

45 Loose 3-inch by 3-inch battens, treated with a flame retardant approved by the Ministry of Transport, should be used for dunnage and also for protection of the lining of the magazine from being chafed by packages stored adjacent to it

46 *Portable Containers*—As an alternative to the S.A S types of magazines, portable containers of Types A and B may be used as provided for in paragraph 25(g) of Sub-section A.

47 The Portable Type A is illustrated in Plate IIA and should be constructed mainly of 4-feet by 4-feet light pressed steel units, suitable for assembly *in situ*. The units are to be not less than $\frac{3}{16}$th-inch thick, with continuous flanges for external bolting The lid is to consist of two 4-feet by 2-feet end units with centre 4-feet by 4-feet units as required. These units to be of $\frac{3}{16}$th-inch flat steel plate, suitably stiffened The end units must be bolted in position before loading to prevent distortion The centre units to be well bolted down along the sides and joints after loading

48 The containers may be assembled 8, 12 or 16 feet long, according to the quantity of explosives to be stowed, and are to be gas tight A suitable plastic jointing compound approved by the Ministry of Transport will be used throughout to effect a seal. The interior is to be painted with an anti-corrosive paint complying with the Lead Paint (Protection against Poisoning Act, 1926, as regards freedom from lead.

49. The 2-feet end units of the lid are to be fitted with a 2-inch socket and a plug, the socket being suitable to take a pressure test apparatus or a ventilating pipe Each end unit of the body is to be fitted with a 1-inch drain plug, low down, about the centre.

50 The container is to be tested to an air pressure of 2 lb. per square inch before stowing the explosives and no leakage should occur.

51 When very small quantities of S A S explosives are to be stowed a portable container, as illustrated in Plate IIB, may be used.

52 The Portable Container Type B should be approximately 5 feet by 2 feet 9 inches by 2 feet. It is to be constructed of plate not less than $\frac{3}{16}$th-inch thick The bottom and ends are to be in one piece, with the edges suitably mitred for welding and flanged to form an efficient lap for securing the sides. If riveting is used, the rivets should be at water-tight spacing.

53 A continuous boundary bar of 2-inch angle is to be fitted on the outside 1 inch below the top and efficiently secured to the container Four 2-inch angle bar stiffeners are to be fitted round the container as shown, one at each end, the others equally spaced as shown. These stiffeners are to be properly secured in position and welded at their upper ends to the boundary bar, the upper standing flanges being snaped off

54. The lid is to be of $\frac{1}{4}$-inch plate and is to extend for $1\frac{1}{2}$ inches beyond the sides of the container A $1\frac{1}{2}$-inch rubber strip $\frac{1}{4}$-inch thick or similar jointing material is to be secured to the underside of the lid by $\frac{1}{8}$-inch steel strips to engage the upper edge of the body and form a gas tight joint. The lid is to be provided with suitable hinges and secured by 20 butterfly nuts and fittings, i.e. six down each side and four at each end

55 A 2-inch socket, with plug, suitable for a pressure test apparatus or ventilating pipe is to be provided in the lid, and a drain plug, 1-inch diameter, at the bottom of the container, as shown. At least four lifting points, with suitable shackles, are to be fitted in the standing flanges of the stiffeners.

56 The interior of the container is to be painted with an anti-corrosive paint complying with the Lead Paint (Protection against Poisoning) Act, 1926, as regards freedom from lead

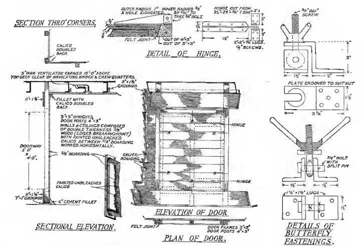
57 Before stowing the explosives, the container is to be tested for air tightness to a pressure of 2 lb per square inch and no leakage should occur.

58 *Magazine Specification*.—Alternative arrangements to those set out in paragraphs 1 to 57 of this Sub-section may be adopted provided they are approved by the Ministry of Transport as being consistent with safety. An approved sand bag enclosure may be used for S A.S explosives in Group 12 instead of the asbestos lined type

PLATE I

SPECIAL MAGAZINE FOR S.A.S. EXPLOSIVES

STOWAGE IN TWEEN DECKS.



SECTION THRO' CORNERS.

DETAIL OF HINGE.

SECTIONAL ELEVATION.

ELEVATION OF DOOR

PLAN OF DOOR.

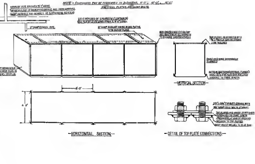
DETAILS OF BUTTERFLY FASTENINGS.

CALICO DOUBLED BACK
OUTER RADIUS 1" INNER RADIUS 3/8" & HOLE ELONGATED BY 1/16" TO TAKE 3/4" BOLT.
FELT JOINT
OUT OF 4"×3"
OUT OF 3"×3"
HINGE CUT FROM 2½"×2½"×5/16" T BAR
2"
3"
12"
2"×2"×3/16" LUGS.
1¼" SCREWS.
3" DIAM VENTILATOR CARRIED 15'-0" ABOVE TOP DECK CLEAR OF NAVIGATING BRIDGE & CREW QUARTERS.
3"×1½" GROUNDS
11"×1¼"
FILLET WITH CALICO DOUBLED BACK
3"×3" UPRIGHTS. DOOR POSTS 4"×3" WALLS & CEILINGS COMPOSED OF DOUBLE THICKNESS 5/8" WOOD (EDGES BREAKING JOINT) WITH PAINTED UNBLEACHED CALICO BETWEEN 5/8" BOARDING WORKED HORIZONTALLY.
DOORWAY 5' 0" × 4'-0".
5/8" BOARDING
PAINTED UNBLEACHED CALICO
11"×1¼"
7"×1" GROUNDS
6" CEMENT FILLET
CALICO
BOARDING
HINGE
HINGE
FELT JOINT
DOOR FRAMES 3"×3" DOOR POSTS 4"×3"
3/8" DIA" SCREW
2"
1½"
2"
PLATE GROOVED TO SUIT NUT
1½"
3 5/8"
3/8" BOLT WITH SPLIT PIN
1½"
1½"
1½"×1½" LUGS
3/4"
1½"

PLATE II

PORTABLE CONTAINERS FOR S.A.S. EXPLOSIVES

TYPE A



NOTE - CONTAINERS CAN BE FABRICATED IN 3 LENGTHS
4'-0"
4'-6"
-VERTICAL SECTION-
-HORIZONTAL SECTION-
-DETAIL OF TOP PLATE CONNECTIONS-

TYPE B

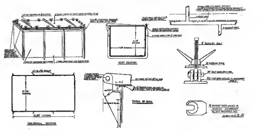
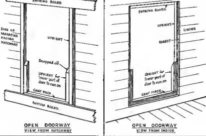


PLATE IIA

CONSTRUCTION OF MAGAZINE DOORS

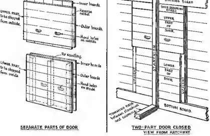
SEE SUB-SECTION D

(diagrammatic, not to scale)


SHORING BOARD
SIDE OF MAGAZINE FACING HATCHWAY
UPRIGHT
Snapped off
UPRIGHT for lower part of door to run on
CANT PIECE
BOTTOM BOARD
SHORING BOARD
UPRIGHT
LINING
RABBET
UPRIGHT for lower part of door to run on
CANT PIECE

OPEN DOORWAY
VIEW FROM HATCHWAY

OPEN DOORWAY
VIEW FROM INSIDE

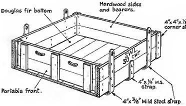


SEPARATE PARTS OF DOOR

TWO-PART DOOR CLOSED
VIEW FROM HATCHWAY

PLATE III

AMMUNITION TRAY


Douglas fir bottom
Hardwood sides and bearers.
4"x 4"x 3/8" corner strap.
SWL 30 CWT
4"x 1/2" M.S. strap
Portable front.
4"x 3/8" Mild Steel strap

A SPECIAL DEEP SIDED IRON BOUND TRAY DESIGNED TO LIFT 30 CWTS, FOR S.A.A. & SHELLS ETC. ITS INTERNAL DIMENSIONS ARE 4' x 4' x 12" ONE SIDE BOARD OF TRAY IS PORTABLE & FITTED INTO CHANNEL BARS THE TRAY IS LIFTED BY MEANS OF THE W.O TYPE FOUR LEGGED SLING WHICH HOOKS ON TO THE MILD STEEL STRAPS THE SLIDING SIDE IS FOR LOADING AND UNLOADING AND MUST BE IN PLACE WHEN SLUNG LOADED SIMILARLY WHEN TRAY IS NOT IN USE.

NOTES:

1. RELAXATIONS MAY BE PERMITTED REGARDING THE WOODS TO BE USED FOR THE TRAY.
2. THE FLOOR OF THE TRAY SHOULD NOT EXCEED 5 FEET SQUARE.
3. THE HEIGHT OF THE SILL SHOULD NOT BE LESS THAN 12 INCHES

PLATE IV. BOMB SLINGS AND HOOK FOR 250, 500 AND 1000 LB. BOMBS.

Not to scale

FIGURE 1

WIRE ROPE SLING

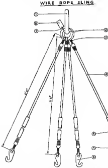


FIGURE 2

CHAIN SLING

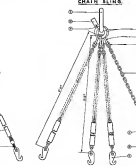
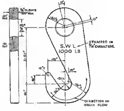


FIGURE 3

HOOK.

STEEL (55 TON), CADMIUM PLATE FINISH



NOTE:- ALL SHARP EDGES TO BE REMOVED (·06" RAD).
HOOK TO BE PROOF LOADED TO 2000 LB

WIRE ROPE SLING – DETAILS.

1. MAIN RING – 8" I/D, 1⅛" SECTION TO B.S.1290
2. INTERMEDIATE RINGS (2) TO B.S.1290 – 2½" I/D, ⅝" SECTION
3. THIMBLE (8) TO B.S.464 TO SUIT ITEM 8. SERVED
4. WIRE ROPE TO B.S.302 BEST PLOUGH STEEL, GALVANISED 1" CIRC. 100/110 TONS Q.I. 6×19 CONSTRUCTION BREAKING LOAD 3·4 TONS THE LENGTHS SHOWN ARE MINIMA, BUT THE DIFFERENCE OF 6" BETWEEN INNER AND OUTER LEGS IS TO BE MAINTAINED.
5. SHEATHING OF LEATHER HYDRAULIC (4) 16" LONG × ⅛" THICK, SECURELY STITCHED
6. HOOK – *SEE FIGURE 3.*
7. WIRE (LENGTH AS REQUIRED) 18 S.W.G. (·048" DIA.) SOFT IRON WIRE
8. TALLY – 16 S.W.G. (·064") BRASS, 4"×2", COMPLETED AS SHOWN IN FIGURE 4

NOTE:- SLINGS TO CONFORM TO A.D.2/SRD/302/R.
AT MANUFACTURE EACH LEG TO BE PROOF LOADED TO 2000 LB.
COMPLETE SLING TO BE PROOF LOADED TO 6000 LB
VERTICAL SAFE WORKING LOAD OF EACH LEG TO BE 1000 LB.

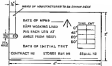
CHAIN SLING (DRAWING SM/C/3455) – DETAILS.

1. MAIN RING – as for wire rope sling
2. INTERMEDIATE RINGS (2) – as for wire rope sling
3. REEVABLE EGG LINKS (4) – 7/16" MILD STEEL IN ACCORDANCE WITH B.S.590 (DRAWING SM/A/3458)
4. CHAIN (LENGTHS AS REQUIRED) – No.2 S.W.G. (·276") IN ACCORDANCE WITH B.S.590 (see details of wire rope sling, item 4)
5. LEATHER SHEATH (as for wire rope sling)
6. HOOK – *SEE FIGURE 3.*
7. WIRE (as for wire rope sling).
8. TALLY (as for wire rope sling)
9. INTERMEDIATE LINKS (8). No.2 S.W.G. (·276" Dia.) MILD STEEL IN ACCORDANCE WITH B.S.590 (DRAWING SM/A/3569)

NOTE:-
The drawings referred to were produced by the Directorate of Servicing Research and Development, Ministry of Supply

FIGURE 4.

TALLY.



DATE OF MFRE ——

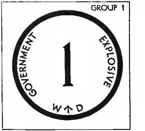
SAFE WORKING LOAD FOR EACH LEG AT ANGLE FROM VERT.

	TONS	CWT
0°		
45°		
60°		
80°		

DATE OF INITIAL TEST

CONTRACT No. STORES REF. No. SERIAL No.

LABELLING OF GOVERNMENT EXPLOSIVES



The label, which is printed in red on a white background, displays the words " Government Explosive ", the Group Number of the explosives in the package, and letters indicating the name of the Department to which the explosive belongs or for which it is being conveyed. As an alternative, this information can be displayed by a stencil in white paint on to the package, or by a combination of label, stencil or brand.

Note.—Certain Naval packages carry a label on which a double classification figure appears thus $\frac{6}{9}$.

The numerator denotes the explosives group as shown in Sub-section B, the denominator indicates a special classification on board H M. ships

SUB-SECTION F

MARKING OF GROUPS 11, 12 AND 13 EXPLOSIVES

1. All smoke explosives in Group 11 are painted Light Green

Those charged Titanium tetrachloride are marked F.M or with one white and one red ring.

Those charged Chlorosulphonic acid mixture are marked C S A M or with one white and one yellow ring.

2. All smoke explosives in Group 12 are painted Light Green.

With the exception of the Cartridges S A., those containing phosphorus may have the letters " PHOS " in black or alternatively a white band.

3. All explosives belonging to Group 13 are painted Light Grey with the addition of Coloured Rings

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Name of Gas	Characteristic Properties	Packing	B S Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C. (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater.	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
				Filling Ratio	Working (Gauge) Pressure (lb per square inch)	Filling Ratio	Working (Gauge) Pressure (lb per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CHLORINE	Non-inflammable. Poisonous Pungent odour and greenish-yellow colour gives warning of dangerous quantities in air. Injurious to membranes and tissues. May cause combustion of acetylene, turpentine and finely divided organic material. Heavier than air.	(1) Cylinders.	B S. 401	1·25	174	1·19	283	(1) On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal. Away from living quarters (see definition (A), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion. Not to be stowed with consignments of sodium, potassium, phosphorus, copper leaf, powdered metals, turpentine, ammonia or sal-ammoniac, nor with coal gas, hydrogen, methane or acetylene	(1) Not allowed.	3	C.
		(2) Large welded containers approved by the Ministry of Transport.		1·25		1·19		(2) As for cylinders. Not more than 50 tons of gas in these large containers may be carried in any ship (see paragraph 10, page 56).	(2) do	do.	C.
CHLORODIFLUOROMETHANE (Monochlorodifluoromethane)	Non-inflammable Odourless. Non-poisonous. Decomposes when passed through flames, evolving hydrochloric and hydrofluoric acid fumes. Much heavier than air.	(1) Cylinders.	B S 401	1·05	238	0·95	380	(1) On deck adequately secured, or under deck May be overstowed	(1) As for cargo ships	7	—
		(2) Large welded containers approved by the Ministry of Transport.		1·00		0·90		(2) As for cylinders No limit.	(2) do	do.	—
CHLOROTRIFLUOROMETHANE (Trifluorochloromethane)	Non-inflammable, non-poisonous	Cylinders.	B.S 401	0·95	1980	0·90	1980	On or under deck. May be overstowed	do.	7	—
CYANOGEN	Inflammable. Highly poisonous Pungent odour Colourless. Soluble in water Heavier than air	do	B.S 401	0·75	134	0·72	230	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, food, foodstuffs, readily combustible solids and strong supporters of combustion.	Not allowed	3	C.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Name of Gas	Characteristic Properties	Packing	B.S. Specification Number	Filling Ratios and Assumed Working Gauge Pressures				Stowage			Recommended Label or Stencil
				Temperate Climates (Maximum Temperature 45° C (113° F.))		Tropical Climates (Maximum Temperature 65° C. (149° F.))		Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
				Filling Ratio	Working (Gauge) Pressure (lb. per square inch)	Filling Ratio	Working (Gauge) Pressure (lb. per square inch)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CYCLOPROPANE	Inflammable Explosive with about 2% to 10% in air Anaesthetic. Heavier than air	Cylinders	B.S. 401	0·51	171	0·48	272	On deck adequately secured, or under deck in a well ventilated space Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	As for cargo ships.	3	A3
DICHLORODIFLUOROMETHANE	Non-inflammable Odourless. Non-poisonous Decomposes when passed through flames, evolving hydrochloric and hydrofluoric acid fumes Heavier than air.	(1) do. (2) Large welded containers, approved by the Ministry of Transport.	B.S. 401	1·18 1·18	141	1·06 1·08	230	(1) On or under deck. May be overstowed. (2) As for cylinders	(1) do. (2) do.	7 do	— —
DIMETHYL ETHER	Inflammable Explosive with about 2% to 50% in air Anaesthetic Heavier than air.	Cylinders.	B.S. 401	0·59	131	0·56	220	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	Not allowed.	3	A3
DIMETHYLAMINE	Inflammable. Slightly heavier than air	do.	B.S. 401	0·59	43	0·44	88	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo Not to be carried in or over holds containing coal. Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion.	do.	3	A3
ETHANE	Inflammable. Odourless Explosive with about 3% to 12% in air Approximately the same density as air.	Cylinders.	B.S. 401	0·36	1980	0·32	1980	On deck adequately secured, or under deck in a well ventilated space. Not to be overstowed by heavy cargo. Not to be carried in or over holds containing coal Away from living quarters (see definition (B), page 5), corrosive or inflammable liquids, readily combustible solids and strong supporters of combustion	As for cargo ships	3	A3

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FORMIC ACID	Fuming liquid with pungent irritating odour Soluble in water. Corrosive to metals and caustic to the skin Combustible.	(1) Glass, earthenware or polythene containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases Not more than 10 gal. in each case.	—	(1) On or under deck.	(1) As for cargo ships.	6	D
		(2) Glass, earthenware or polythene containers of individual capacity not exceeding 6 gal., of suitable make, effectively closed	10%	6 gal	(2) Packed in pairs in stout slatted crates lined with stout corrugated paper and with adequate protection for the neck of the container.	—	(2) do.	(2) do	do.	D
		(3) Suitable polythene containers, effectively closed	10%	7 gal.	(3) Totally enclosed singly in a tight fitting fibreboard container of suitable construction.	—	(3) do	(3) do	do	D
		(4) Glass, earthenware or polythene containers of suitable make, effectively closed	10%	15 gal.	(4) Packed singly in— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.	—	(4) do.	(4) do	do	D
		(5) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or other suitable material, effectively closed	10%	100 gal.	(5) —	—	(5) do	(5) do	do	D
		(6) Suitable unlined stainless steel drums, effectively closed.	10%	100 gal	(6) —	—	(6) do	(6) do	do.	D
HYDRAZINE COMPOUNDS (other than those specifically mentioned)	—	Shipments of hydrazine compounds other than those specifically mentioned (except where made under the provisions of Section 9) must be referred to the Ministry of Transport.								
HYDRAZINE HYDRATE	Corrosive fuming liquid. Strong chemical reducing agent. Explosive and toxic vapour Caustic to the skin and eyes vapour irritant to mucous membranes and eyes.	(1) Glass or polythene bottles of suitable make, effectively closed	5%	5 pints	(1) Packed with suitable protective material in wooden cases Not more than 6 gal. in each case.	—	(1) On deck only Away from strong acids and strong supporters of combustion.	(1) Not allowed.	3	D

(continued overleaf)

(For the carriage of Laboratory Chemicals and or Medicinal Preparations in Limited Quantities, see Section 9)

							Stowage			
Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDRAZINE HYDRATE (*Contd.*)		(2) Glass stoppered glass containers or polythene stoppered polythene containers of suitable make, effectively closed	5% to be filled with Nitrogen	10 gal	(2) Packed singly in wooden cases with suitable protective material.	—	(2) On deck only. Away from strong acids and strong supporters of combustion.	(2) Not allowed.	3	D.
		(3) Suitable polythene containers of not less than ·05 in. thickness, effectively closed	do	10 gal	(3) Packed singly and tightly in suitable steel drums not thinner than 22 B.G (·031 in.), effectively closed.	—	(3) do.	(3) do	do.	D
		(4) Aluminium containers (not less than 99·5% aluminium) of suitable make, tested by hydraulic pressure to 50 lb per square inch, effectively closed.	do.	50 gal.	(4) —	—	(4) do.	(4) do.	do.	D
		(5) Suitable stainless steel drums tested by hydraulic pressure to 50 lb. per square inch, effectively closed.	do	50 gal.	(5) —	—	(5) do.	(5) do	do.	D
		(6) Suitable polythene containers of not less than 1/16 in. thickness, effectively closed	do	45 gal	(6) Packed singly and tightly in a suitable steel drum not thinner than 18 B.G (0·0496 in.), with securely fastened lid	—	(6) do.	(6) do	do.	D.
HYDRAZINE HYDROBROMIDE, HYDRAZINE HYDROCHLORIDE; HYDRAZINE SULPHATE	Solid. Toxic. React with strong solutions of caustic alkali to form hydrazine hydrate, a fuming liquid with an explosive and toxic vapour. React violently with liquid oxidising agents.	May be regarded as non-hazardous provided they are packed in suitable containers and stowed away from caustic alkalis and strong oxidising agents.								
HYDRIODIC ACID (Hydrogen Iodide Solution).	Liquid. Fumes in air. Consists of a solution of hydrogen iodide which is a gas at ordinary temperatures. Corrosive to iron and steel and certain other metals, irritant to the skin and mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On deck only. Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed	None.	D.
		(2) do.	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	D.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDROCHLORIC ACID (Muriatic Acid or Spirits of Salts).	Strongly fuming liquid, consisting of a solution in water of hydrogen chloride which is a gas at ordinary temperatures. Very corrosive to most metals evolving hydrogen. Poisonous Irritant to the skin and mucous membranes.	(1) Glass, polythene or earthenware containers of suitable make, effectively closed	5%	2½ gal	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal in each case.	—	(1) On deck only Away from Sulphuric Acid and Nitric Acid.	(1) Not allowed	4	D.
		(2) do.	5%	15 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material.	—	(2) do.	(2) do	do	D.
		(3) Polythene bottles of suitable make, effectively closed	10%	14 gal.	(3) Packed singly in tight-fitting wooden cases of suitable make.	—	(3) do.	(3) do	do.	D.
		(4) Suitable metal drums (e.g. steel), each lined or coated internally with rubber or other suitable material, effectively closed.	5%	50 gal	(4) —	—	(4) do.	(4) do	do.	D
		(5) Large welded containers approved by the Ministry of Transport.	5%	—	(5) —	—	(5) do	(5) do.	do.	D
HYDROFLUORIC ACID ANHYDROUS	(See Gases, Section 2).									
HYDROFLUORIC ACID SOLUTION (Fluoric Acid, Hydrogen Fluoride Solution).	Fuming liquid consisting of a solution in water of hydrogen fluoride, which is a gas at normal temperatures. Very corrosive. Dissolves glass and certain metals. Has little or no action on lead, gutta percha, ebonite, certain plastics, paraffin wax or bitumen. Poisonous. Caustic to the skin causing painful sores. Irritant to the mucous membranes.	(1) Sound gutta percha, wax, ebonite or suitable plastic bottles, effectively closed.	10%	1 gal.	(1) Packed with effective absorbent material in wooden cases. *Kieselguhr or other siliceous material is not allowed.* Not more than 10 gal in each case.	—	(1) On deck only Away from Sulphuric Acid and Nitric Acid	(1) Not allowed.	4	D
		(2) Sound leaden or polythene bottles, effectively closed.	10%	11 gal	(2) Packed with effective absorbent material in wooden cases or suitable plywood cases or kegs. *Kieselguhr or other siliceous material is not allowed*	—	(2) do	(2) do	do	D.
		(3) (*a*) *Hydrofluoric Acid of all strengths.* Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	10%	50 gal	(3) (*a*) —	—	(3) (*a*) do	(3) (*a*) do.	do	D.

(continued overleaf)

(For the carriage of Laboratory Chemicals and or Medicinal Preparations in Limited Quantities, see Section 9)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1 10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 55) (10)	
HYDROFLUORIC ACID SOLUTION (*Contd.*)		(3) (*b*) *Hydrofluoric Acid of not less than 70% w/w* Suitable iron or steel drums effectively closed Care should be taken against build up of pressure. Only drums free from scale should be used.	10%	90 gal	(3) (*b*) —	—	(3) (*b*) On deck only Away from Sulphuric Acid and Nitric Acid.	(3) (*b*) Not allowed.	4	D
ISOPROPYL ACID PHOSPHATE	Liquid solidifies at about 68° F (20° C.) Mildly corrosive to steel.	PACKING, STOWAGE AND LABELLING AS FOR PHOSPHORIC ACID (page 92) EXCEPT THAT THE CONTAINERS MUST BE HERMETICALLY SEALED								
LEAD SULPHATE (containing more than 3% free acid)	Usually sludge from acid tanks or batteries containing free acid and therefore corrosive to some extent.	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid.	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases.	—	(1) On or under deck. Away from food or foodstuffs and living quarters (see def (B), page 5)	(1) As for cargo ships.	4	D.
		(2) do.	5% if liquid.	15 gal if liquid.	(2) Packed singly in.— (*a*) wicker hampers with wicker bonnets; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper; or (*d*) wooden cases with suitable protective material.	—	(2) do	(2) do.	do	D.
		(3) Suitable metal drums (e.g. steel), each lined or coated internally with lead or other suitable material, effectively closed.	—	100 gal	(3) —	—	(3) do	(3) do	do.	D
		(4) Suitable wooden barrels, effectively closed	—	—	(4) —	—	(4) do	(4) do.	do.	D
LEAD SULPHATE (containing not more than 3% free acid)	Not dangerous.	NO RESTRICTIONS								

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM HYDROXIDE SOLUTION (Caustic Soda Liquor, Sodium Hydrate, Lye) (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material					
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) On or under deck Not in contact with ammonium compounds, aluminium, zinc or alloys thereof	(3) As for cargo ships	6	D
		(4) Suitable metal drums (e.g. steel), effectively closed	—	100 gal.	(4) —	—	(4) do.	(4) do.	do.	D
SODIUM HYPOCHLORITE	Liquid with odour of chlorine.	(1) Glass, earthenware or polythene containers of suitable make, effectively closed. Vented containers to be used when there is more than 5% available chlorine in the solution	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases or fibreboard cases approved by the Ministry of Transport (Earthenware containers need only to be wickered to the shoulder in lieu of absorbent material.)	—	(1) On or under deck.	(1) As for cargo ships	4	—
		(2) Glass, earthenware or polythene containers of suitable make, fitted with a pressure relief valve or vent.	10%	15 gal.	(2) Packed singly in— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*d*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do.	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SULPHURYL CHLORIDE	Liquid with pungent odour. Decomposed by water with the formation of both hydrochloric and sulphuric acids, which are corrosive to iron and steel. Caustic to the skin. Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only.	(1) Not allowed.	4	D.
		(2) do	10%	6 gal.	(2) Packed singly in,— (a) wicker hampers with wicker bonnets, or (b) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (c) wooden cases with suitable protective material.	—	(2) do	(2) do	do	D.
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	—	(3) —	2 cwt.	(3) do	(3) do.	do	D.
THIOGLYCOLLIC ACID	Colourless liquid with unpleasant odour. Corrosive. Harmful to the skin.	(1) Glass, earthenware or plastic containers of suitable make, effectively closed.	10%	2½ gal.	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck	(1) As for cargo ships.	6	D.
		(2) do	10%	15 gal.	(2) Packed singly in,— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material, or (e) For plastic containers only. Suitable metal drums so designed as to fit the plastic containers firmly.	—	(2) do	(2) do.	do	D.

(*For the carriage of Laboratory Chemicals and or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main in Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1 10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THIONYL CHLORIDE	A pungent liquid. Decomposed by water into sulpharous and hydrochloric acids, which are corrosive to iron and steel Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases Not more than 10 gal in each case.	—	(1) On deck only.	(1) Not allowed.	4	D.
		(2) do.	10%	10 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material	—	(2) do	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), effectively closed	10%	—	(3) —	2 cwt.	(3) do.	(3) do	do.	D
TITANIUM TETRACHLORIDE	Liquid. In the presence of moist air forms a dense white cloud or vapour. Decomposed by water with the formation of hydrochloric acid, which is very corrosive to iron and steel and certain other metals Irritant to the mucous membranes.	(1) Glass or earthenware containers of suitable make, effectively closed	10%	2½ gal.	(1) Packed with whiting or other effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) do.	(1) do.	do.	D
		(2) do.	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material.	—	(2) do	(2) do.	do.	D
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	10 gal	(3) —	—	(3) do	(3) do	do	D
		(4) Steel drums approved by the Ministry of Transport.	10%	50 gal	(4) —	—	(4) do	(4) do	do.	D
		(5) Specially strong steel containers.	—	—	(5) Packed in wooden cases.	—	(5) On or under deck.	(5) do	do	D

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZINC CHLORIDE SOLUTION (Killed Spirit, Tinning Flux).	Corrosive Burns the skin	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal in each case	—	(1) On or under deck.	(1) As for cargo ships	6	D
		(2) do	5%	15 gal.	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (d) wooden cases with suitable protective material.	—	(2) do	(2) do	do	D.
		(3) *When neutral.* Tins or cans of suitable make, effectively closed.	5%	—	(3) Packed with suitable protective material in wooden cases	—	(3) do	(3) do.	do	D
		(4) *When neutral* Suitable metal drums (e.g. steel), effectively closed.	5%	100 gal	(4) —	—	(4) do.	(4) do.	do.	D.
ZINC CHLORIDE (SOLID) (Tinning Flux).	Solid. Readily absorbs water and becomes liquid. Corrosive when wet. Burns the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do	do	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed in wooden cases.	—	(3) do	(3) do	do.	—
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do	(4) do.	do	—

SECTION 4

(Category (iv) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Poisonous Substances

GENERAL NOTES

1. General

This Section includes substances which are dangerous by reason of the poisonous or deleterious effect which they have on human beings when they find their way into the body either by being breathed, by being taken through the mouth, or by absorption through the skin

Only substances whose primary danger is poisoning are included in this Section. Poisonous substances which have other more dangerous characteristics are included in the Sections dealing with such characteristics The poisonous compressed gases are also excluded from this Section and will be found in Section 2

This Section is divided into two groups (A) substances which give off a poisonous gas or vapour, and (B) other poisonous substances With substances in Group (A), which are generally liquids, danger arises primarily from breathing the gas or vapour, substances in Group (B) become dangerous when taken through the mouth and may be either liquids or solids Certain substances in both groups are also dangerous if absorbed through the skin In general the precautions required will be similar for the two groups

The tables also set out any subsidiary hazards which may result from damage to a container or containers

2. Packing

The main precautions required are to prevent leakage of the substance or its gas or vapour during the normal usage incidental to transport In the case of liquids, an adequate air space must be allowed in the containers for thermal expansion, the minimum air space required is shown in the Table.

Packing material may be required:—

(i) for protective purposes only, or

(ii) for protective purposes and also for the absorption of liquid in the event of breakage

In most cases it may be corrugated paper, sawdust, woodwool or similar material, but in certain special cases as specified in the Tables kieselguhr or other approved substances must be used for packing purposes Where "effective absorbent material" is specified it must comply with the definition of "effective" on pages 5 and 6 and in addition, when two or more containers of a diameter exceeding 3½ inches (90 mm.) are packed in a case, the case must contain an internal partition or partitions, with the object of maintaining the position of each such container in relation to each other such container in the case All packages must conform to the general principles set out in the General Recommendations (pages 5 and 6)

Where no limit of weight or capacity is specified in the Tables there is no restriction on the weight or capacity of the packages

3. Stowage

Generally, substances in this section should be stowed in such a manner as to avoid all risk of contaminating food or foodstuffs

For liquids giving off poisonous gas or vapour, stowage in a well ventilated space is desirable. Unless otherwise specified, these substances may be carried on or under deck Any special conditions are shown in the Table.

After discharge, spaces used for the transport of poisonous substances should be properly cleaned and examined before being used for other cargoes, especially food and foodstuffs

4. Empty Containers

Containers which have lately carried poisonous substances are liable to present a danger, and regard should be paid to the hazards attaching to the poisonous substance last carried.

5. This Section is intended to cover the carriage of such substances in appreciable quantities. Attention is drawn to the provisions in Section 9 applicable to laboratory chemicals and/or medicinal preparations in limited quantities.

TABLE A—SUBSTANCES GIVING OFF POISONOUS GAS OR VAPOUR

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ACETONE CYANOHYDRIN effectively stabilised	Colourless to amber coloured liquid. Miscible with water Flashpoint about 165° F (74° C.). Stable in the presence of a trace of mineral acid, e.g. sulphuric acid Poisonous, absorption through the skin or by inhalation of the vapour is dangerous	(1) Glass or earthenware containers of suitable make, effectively closed	5%	2½ gal	(1) Packed with effective absorbent material in wooden cases Not more than 10 gal in each case.	—	(1) On deck only. Away from alkalis, nitric acid, combustible cargo, food and foodstuffs	(1) Not allowed.	None.	C.
		(2) Suitable steel drums, effectively closed.	5%	50 gal.	(2) —	—	(2) do	(2) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 5)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
p-DICHLOROBENZENE (*Contd.*)	Crystalline solid. Penetrating odour. Insoluble in water. Volatile. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food, foodstuffs and living quarters (see definition (A) page 5)	(1) As for cargo ships.	7	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases	—	(2) do.	(2) do.	do	—
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do	—
		(4) Suitable barrels or cases of wood, effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do	—
		(5) *For temperate climates only* 5 ply paper bags incorporating a suitable vapour-proof barrier, effectively closed	—	60 lb	(5) —	—	(5) do	(5) do.	do	—
DICHLOROMETHANE (Methylene Chloride)	Volatile liquid giving off anaesthetic vapour. Not readily inflammable.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	2½ gal	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck. Away from living quarters (see definition (A), page 5)	(1) do.	None.	—
		(2) Tins or cans of suitable make, effectively closed.	10%	—	(2) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(2) do.	(2) do.	do	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	100 gal.	(3) —	—	(3) do.	(3) do.	do.	—
DIETHYL SULPHATE (Ethyl Sulphate)	Liquid. Vapour irritant and poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed.	10%	5 pints	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case	—	(1) On deck only.	(1) As for cargo ships.	None.	C.
		(2) do	10%	6 gal.	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper, or (*c*) wooden cases with suitable protective material	—	(2) do.	(2) do.	do	C.
		(3) Suitable metal drums (e.g. steel), effectively closed.	10%	50 gal.	(3) —	—	(3) do.	(3) do.	do	C.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
DINITROBENZENES and DINITROTOLUENES (*Contd.*)		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases.	—	(3) On or under deck. Away from food and foodstuffs	(3) As for cargo ships.	None.	—
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do.	do.	—
		(5) Provided substance will remain solid at any temperature likely to be met with under all conditions of transport: suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do.	—
DISINFECTANTS, other than those of coal tar type, which are non-hazardous.	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
FUNGICIDES	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
INSECTICIDES	To be packed and stowed in accordance with the rules applicable to the hazardous constituents.									
LEAD ACETATE (Sugar of lead).	Solid	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships	None.	C
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do	do.	C.
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do.	(3) do.	do.	C
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed with suitable protective material in wooden cases	—	(4) do.	(4) do.	do.	C.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	
LEAD ACETATE (Sugar of lead) (*Contd*)		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) On or under deck. Away from food and food-stuffs.	(5) As for cargo ships.	None.	C.
		(6) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed, or suitable fibre-board drums, effectively closed.	—	—	(6) —	—	(6) do.	(6) do	do.	C.
		(7) Double-walled paper bags, securely closed	—	—	(7) Tightly packed in outer cases	—	(7) do	(7) do	do	C.
		(8) Sound hessian bags, paper lined, securely closed.	—	—	(8) —	—	(8) do	(8) do	do	C.
MERCURY COMPOUNDS:— MERCURIC CHLORIDE (Corrosive Sublimate, Mercury Bichloride)	Solid or fine powder. Care should be taken not to breathe air laden with fine powder. Dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do.	(1) do.	do	—
		(2) do.	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do	do	—
		(3) Tins or cans of suitable make, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) do	(3) do	do.	—
		(4) Suitable metal drums (e.g. steel) effectively closed.	—	—	(4) —	—	(4) do	(4) do	do.	—
		(5) Suitable sound hard-wood casks or barrels, paper lined	—	—	(5) —	—	(5) do	(5) do	do	—
		(6) Double-walled paper bags, securely closed	—	—	(6) Tightly packed in outer cases	—	(6) do.	(6) do	do.	—
		(7) Suitable polythene bags, effectively closed	—	—	(7) Packed in fibreboard drums of suitable make, effectively closed. Not more than 1 cwt in each drum.	—	(7) do.	(7) do	do.	—
MERCURIC CYANIDE	See under Cyanides.									

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MERCURIC NITRATE, MERCUROUS NITRATE (see also Section 7, Strong Supporters of Combustion)	Crystals or powder which become liquid by absorbing moisture from the air Strong oxidising agent. Dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships.	None	—
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) do.	(3) do	do	—
		(4) Suitable metal drums (e g. steel), effectively closed.	—	—	(4) —	—	(4) do.	(4) do	do.	—
MERCURY COMPOUNDS excluding Mercurous Chloride, which is not poisonous, and those mentioned above, including the following:— *Note* Where reference is made to a compound of mercury, it includes mercurous and mercuric MERCURY ACETATE, MERCURY-AMMONIUM CHLORIDE, (*contd.*)	These are mostly in the form of crystals or powders and are dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases If liquid, not more than 10 gal. in each case	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in:— (a) wicker hampers with wicker bonnets, or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do	do	—

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MERCURY COMPOUNDS (contd.) MERCURY BENZOATE, MERCURY BISULPHATE, MERCURY BROMIDE, MERCURY GLUCONATE, MERCURY IODIDE, MERCURY NUCLEATE (Mercurol), MERCURY OLEATE, MERCURY OXIDE, MERCURY OXYCYANIDE, MERCURY POTASSIUM IODIDE, MERCURY SALICYLATE, MERCURY SULPHATE, MERCURY THIOCYANATE.		(3) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships.	None	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed with suitable protective material in wooden cases.	—	(4) do.	(4) do	do	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) do.	—	(5) do	(5) do	do	—
		For solids only (6) Suitable polythene bags, effectively closed.	—	—	(6) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(6) do.	(6) do	do.	—
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(7) —	—	(7) do.	(7) do	do	—
		(8) Double-walled paper bags, securely closed.	—	—	(8) Tightly packed in outer cases.	—	(8) do.	(8) do.	do	—
		(8) Suitable polythene bags, effectively closed.	—	—	(9) Packed in fibreboard drums of suitable make, effectively closed. Not more than 1 cwt. in each drum.	—	(8) do.	(9) do.	do.	—
NICOTINE, NICOTINE COMPOUNDS AND PREPARATIONS THEREOF, incl. NICOTINE HYDROCHLORIDE, and solutions thereof	Liquids or solids. The solid forms are deliquescent	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid.	2½ gal. if liquid	(1) Packed with effective absorbent material in wooden cases. If liquid not more than 10 gal. in each case.	—	(1) On or under deck. Away from food and foodstuffs.	(1) As for cargo ships	None	C.
		(2) do	do.	do	(2) Packed with effective absorbent material in fibreboard containers approved by Ministry of Transport. If liquid not more than 7½ gal. in each case.	—	(2) do.	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed.	do	—	(3) As (1) above.	—	(3) do.	(3) do.	do.	C.
		(4) do.	do	—	(4) As (2) above.	—	(4) do.	(4) do.	do.	C.
		(5) Suitable metal drums (e.g. steel), effectively closed.	do	100 gal. if liquid	(5) —	—	(5) do.	(5) do	do.	C.

Note.—Seed dressings in dry powder form, containing not more than 8·5% mercury, may be regarded as non-hazardous, but should be stowed away from food and foodstuffs.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
p-NITROPHENOL (Paranitrophenol) (*Contd.*)		(5) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) On or under deck. Away from food and food-stuffs	(5) As for cargo ships	None.	—
NITROTOLUENE (Ortho-, para-nitrotoluene)	Solid or liquid Almost insoluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	5% if liquid	2½ gal if liquid	(1) Packed with suitable protective material in wooden cases If liquid, not more than 10 gal in each case.	—	(1) do.	(1) do.	do	—
		(2) do.	do.	15 gal. if liquid	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ¼ inch of packing material the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper or (*d*) wooden cases with protective material.	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed	do	—	(3) Packed with suitable protective material in wooden cases If liquid not more than 10 gal in each case	—	(3) do.	(3) do	do	—
		(4) Suitable metal drums (e.g. steel), effectively closed	do	100 gal. if liquid	(4) —	—	(4) do.	(4) do	do	—
		(5) If solid *for Home Trade Ships only* (as defined in Section 742 of the Merchant Shipping Act, 1894) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed.	—	—	(5) —	—	(5) do	(5) do.	do	—
OXALIC ACID and OXALIC SALTS	Solid	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) do	(1) do.	do.	C.
		(2) do	—	—	(2) Packed singly in — (a) wicker hampers with wicker bonnets, or	—	(2) do	(2) do.	do	C.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OXALIC ACID and OXALIC SALTS (*Contd.*)					(*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from food and food-stuffs.	(3) As for cargo ships.	None.	C.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) do	—	(4) do	(4) do	do.	C.
		(5) Tins or cans of suitable make, effectively closed.	—	—	(5) Packed with suitable protective material in wooden cases.	—	(5) do.	(5) do.	do.	C.
		(6) Suitable metal drums (e.g. steel), effectively closed	—	—	(6) —	—	(6) do.	(6) do.	do	C.
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed, or suitable fibreboard drums, effectively closed.	—	—	(7) —	—	(7) do	(7) do.	do	C.
		(8) Double-walled paper bags, securely closed	—	—	(8) Tightly packed in outer cases.	—	(8) do.	(8) do.	do.	C.
		(9) Suitable jute bags with heat sealed polythene liners	—	—	(9) —	—	(9) do.	(9) do	do.	C.
		(10) 5-ply paper bags one ply coated with suitable waterproof material, effectively closed	—	56 lb.	(10) —	—	(10) do	(10) do.	do	C.
m-PHENYLENEDIAMINE (META-PHENYLENEDIAMINE)	Solid. Soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do.	(1) do	do.	—
		(2) do	—	—	(2) Packed singly in— (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or	—	(2) do.	(2) do	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CALCIUM PHOSPHIDE or articles charged wholly or mainly with calcium phosphide.	Solid. In contact with water or damp air readily evolves phosphine. This gas is poisonous and ignites spontaneously in air	(1) Tins or cans of suitable material, hermetically sealed.	—	28 lb per container Not more than 1 cwt per case.	(1) Packed in wooden cases Not more than 4 tins in each case.	—	(1) Keep dry. On deck (or, in special circumstances, under deck), away from acids, inflammable substances and living quarters (see definition (B), page 5).	(1) Not allowed	3	G. and A.3
		(2) *In the form of floats, flares, etc.*, as specified in Section 1, page 22.	—	—	(2) Packed in wood or metal cases, effectively closed.	—	(2) do.	(2) do.	do	G and A 3
CALCIUM SILICIDE	In contact with water gives off hydrogen gas. Calcium carbide may be present as an impurity and acetylene may also be evolved. With acids silicon hydride is formed and this gas may ignite spontaneously in air	(1) Glass or earthenware containers of suitable make, effectively closed	—	1½ lb Not more than 2 cwt. per case.	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry. On or under deck. Away from acids, inflammable substances and living quarters (see definition (B), page 5).	(1) do.	4	G
		(2) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt. per case.	(2) Packed in wooden cases	—	(2) On or under deck as for (1).	(2) do	do	G
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do	do.	G
CALCIUM SILICON (Calcium Manganese Silicon)	Liable to evolve inflammable gas when in contact with water. Evolves spontaneously inflammable gas with acids.	AS FOR CALCIUM SILICIDE								
COMMERCIAL THERMITE WITHOUT PRIMER consisting of finely divided aluminium and iron oxide only	MAY BE PACKED, STOWED AND LABELLED AS FOR ALUMINIUM METAL OR ALLOY (BORINGS, CHIPS, GRANULES, SHAVINGS, UNPOLISHED POWDER) (page 155)									
FERRO-ALLOYS With the exception of those listed hereunder, are not dangerous and require no special precautions. FERROSILICON Containing — (*a*) up to 30% and above 70% Silicon	MAY BE CARRIED IN BULK IN SHIPS SPECIALLY FITTED AND APPROVED BY THE MINISTRY OF TRANSPORT. NOT DANGEROUS WHEN PACKED IN SUITABLE CONTAINERS									

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ZINC PERMANGANATE (Contd)					of the base of the metal hamper is approximately equal to the diameter of the top of the hamper					
		(3) Suitable polythene bags, effectively closed	—	—	(3) Packed with suitable protective material in wooden cases Not more than 1 cwt in each case	—	(3) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs and hydrogen peroxide.	(3) As for cargo ships	4	F.
		(4) Tins or cans of suitable make, effectively closed	—	—	(4) Packed in wooden cases.	—	(4) do.	(4) do	do	F.
		(5) Suitable metal drums (e.g steel), effectively closed	—	—	(5) —	—	(5) do.	(5) do	do	F.
PEROXIDES:—	May cause ignition of organic material									
BARIUM PEROXIDE (Barium Binoxide, Barium Dioxide, Barium Superoxide).	Powder	(1) Glass or earthenware containers of suitable make, effectively closed	—	7 lb. per container Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals, food and foodstuffs.	(1) do	4	F
		(2) Tins or cans of suitable make, effectively closed	—	56 lb. per container Not more than 2 cwt. per case	(2) Packed in wooden cases	—	(2) do	(2) do	do.	F.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do.	F
CALCIUM PEROXIDE (Calcium Superoxide)	Powder Slightly soluble in water	(1) Glass or earthenware containers of suitable make, effectively closed	—	7 lb. per container Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from all combustible cargo, strong acids and powdered metals.	(1) do	4	F
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb. per container Not more than 2 cwt. per case	(2) Packed in wooden cases	—	(2) do.	(2) do	do.	F.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do	do.	F.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

							Stowage			
Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
HYDROGEN PEROXIDE (*a*) Solutions of a strength guaranteed to be not greater than 6% by weight.	Not dangerous—no special precautions									
(*b*) Solutions of a strength greater than 6% and not exceeding 35% by weight.	As used in commerce is a liquid. Its oxidising properties are great and its rate of decomposition increases rapidly with a rise in temperature. Should a package break, a hose should be immediately played upon it to prevent the liquid drying in its concentrated state on wood or any fibrous material.	(1) For properly stabilised solutions of strength not greater than 35% by weight. Glass, earthenware or plastic containers, of suitable make, effectively closed.	10%	5 pints	(1) Packed with effective absorbent material in wooden cases. Not more than 10 gal. in each case.	—	(1) On or under deck, away from all sources of heat, permanganates, hypochlorites, powdered metals, or combustible material	(1) Not allowed.	4	F
		(2) Glass, earthenware or plastic containers of suitable make, fitted with pressure relief valve or vent	10%	2½ gal	(2) do.	—	(2) Stowed so that valves or vents are uppermost, on or under deck, away from all sources of heat, permanganates, hypochlorites, powdered metals, or combustible material.	(2) do	do	F
		(3) do.	10%	15 gal	(3) Packed singly in— (*a*) wicker hampers with wicker bonnets, or	—	(3)(*a*) do	(3) (*a*) do.	do	F.
					(*b*) wooden cases with suitable protective material, or	—	(*b*) do.	(*b*) do.	do	F.
					(*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(*c*) do	(*c*) do.	do	F.
					(*d*) For plastic containers only. Packed singly in strong iron hampers with iron bonnets, or suitable sheet iron, aluminium, or aluminium alloy cases so designed as to fit the plastic containers firmly.	—	(*d*) do.	(*d*) do.	do	F.
		(4) Suitable aluminium drums or barrels suitably vented.	5%	40 gal.	(4) —	—	(4) do.	(4) do.	do	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
HYDROGEN PEROXIDE (*Contd.*) (*c*) Solutions of a strength greater than 35% and not exceeding 60% by weight.		(1) For properly stabilised solutions of strength not greater than 60% by weight, suitable glass containers fitted with a pressure relief valve.	33⅓%	5 pints	(1) Packed with kieselguhr free from organic matter or other suitable absorbent non-combustible material in metal cases or wooden cases with a watertight metal lining, the bottles to be so surrounded that in the event of spillage or breakage all the liquid shall be satisfactorily absorbed. Not more than 4 gal. of liquid in each case.	—	(1) Stowed so that valves or vents are uppermost, on or under deck, away from all sources of heat, permanganates, hypochlorites, powdered metals or combustible material. Not to be overstowed.	(1) Not allowed.	4	F.
		(2) For properly stabilised solutions of strength not greater than 60% by weight, plastic containers of suitable make, effectively closed.	33⅓%	5 pints	(2) do.	—	(2) do	(2) do	do.	F.
		(3) Plastic containers of suitable make, fitted with pressure relief valve or vent	10%	15 gal.	(3) Packed singly in strong iron hampers with iron bonnets	—	(3) Stowed so that valves or vents are uppermost, on deck only, away from all sources of heat, permanganates, hypochlorites, powdered metals or combustible material. Not to be overstowed.	(3) do.	do.	F.
		(4) do.	10%	15 gal.	(4) Suitable sheet iron, aluminium, or aluminium alloy cases, so designed as to fit the plastic containers firmly	—	(4) Stowed so that valves or vents are uppermost, on or under deck, away from all sources of heat, permanganates, hypochlorites, powdered metals or combustible material. Not to be overstowed	(4) do	do.	F.
		(5) Suitable drums or barrels of aluminium of not less than 99·5% purity, provided with a filler cap and so constructed as to stand on one end only, the other end being provided with a vent so constructed as to prevent effectively any leakage of the contents and the ingress of matter from outside	10%	40 gal.	(5) —	—	(5) do	(5) do.	do.	F.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SODIUM PEROXIDE (Sodium Binoxide, Sodium Dioxide, Sodium Superoxide, Oxone).	Powder. Soluble in water, developing great heat. Will cause ignition of inflammable liquids, particularly in the presence of water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	7 lb. per container. Not more than 1 cwt. per case	(1) Packed with suitable protective material in tin-lined cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids and powdered metals.	(1) On deck only.	3	F
		(2) Tins or cans of suitable make, hermetically sealed.	—	56 lb. per container. Not more than 3 cwt. per case.	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	F.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	F.
STRONTIUM PEROXIDE (Strontium Dioxide)	Powder. Decomposed by hot water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	Not more than 1 cwt. per case.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, powdered metals and strong acids.	(1) As for cargo ships.	4	F
		(2) Tins or cans of suitable make, effectively closed.	—	56 lb. per container. Not more than 2 cwt. per case.	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	F.
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	F.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MISCHMETALL (Slabs or ingots)	Emits sparks when scratched or struck. Evolves hydrogen in contact with water or moist air	(1) Tins or cans of suitable make, effectively closed	—	2 cwt.	(1) Packed in wooden cases.	—	(1) On or under deck. Not in the same hold or compartment as inflammable substances or strong supporters of combustion.	(1) As for cargo ships.	4	—
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do.	do	—
		(3) Suitable barrels or cases of wood, effectively closed.	—	—	(3) —	—	(3) do	(3) do	do	—
NAPHTHALENE, CRUDE OR REFINED (Creosote Salts)	Inflammable. Strong tarry smell.									
(a) Melting Point below 74° C (165° F).		(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. If on deck protected by suitable fireproof material.	(1) do.	6	E.
		(2) Tins or cans of suitable make effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do	do	E.
		(3) Sound metal drums or hard or plywood casks of suitable make, effectively closed	—	—	(3) —	—	(3) do	(3) do.	do.	E.
(b) Melting Point 74° C. (165° F) and above (e.g. Flake Naphthalene, Moth Balls, etc.)		(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) do	(1) do.	do.	E.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do.	E.
		(3) Sound metal drums or hard or plywood casks of suitable make, effectively closed	—	—	(3) —	—	(3) do.	(3) do.	do.	E.
		(4) Fibreboard casks of suitable make, effectively closed	—	2 cwt.	(4) —	—	(4) do.	(4) do.	do.	E.
		(5) Strong closely woven bags or double hessian bags of suitable make, effectively closed	—	—	(5) —	—	(5) do	(5) do.	do.	E.
		(6) Suitable (e.g. "Kraft") paper bags of 2, 3 or 4 ply, effectively closed.	—	—	(6) Packed in hessian outer bags.	—	(6) do.	(6) do.	do.	E.
		(7) Suitable (e.g. "Kraft") paper bags of 5 or 6 ply, effectively closed.	—	—	(7) —	—	(7) do	(7) do.	do.	E.
		(8) Wooden or plywood cases of suitable make, effectively closed	—	—	(8) —	—	(8) do	(8) do.	do	E.
		(9) Fibreboard cases of suitable make, effectively closed.	—	56 lb.	(9) —	—	(9) do	(9) do	do	E.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOSPHORUS AMORPHOUS (Red Phosphorus)	Powder Readily ignited by friction Insoluble in water In the case of fire fumes given off by this substance are irritating and suffocating.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	28 lb per container Not more than 2 cwt. per case	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from strong supporters of combustion.	(1) As for cargo ships.	4	E
		(2) Tins or cans of suitable make, effectively closed	—	do	(2) Packed in wooden cases	—	(2) do	(2) do.	do.	E.
		(3) Suitable metal drums (e.g steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do	do.	E.
PHOSPHORUS PENTASULPHIDE, free from white or yellow phosphorus.	Readily combustible, easily ignited by friction May ignite spontaneously in the presence of moisture	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food, foodstuffs, acids, alkalis, strong oxidising agents, inflammable substances and living quarters (see Definition (A), page 5)	(1) On deck only	3	E and G
		(2) Tins or cans of suitable make, effectively closed	—	28 lb per container Not more than 2 cwt per case	(2) Packed in wooden cases	—	(2) do.	(2) do.	3	E. and G
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do	(3) do	3	E. and G
PHOSPHORUS SESQUISULPHIDE, free from white or yellow phosphorus.	Readily combustible, easily ignited by friction.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from food, foodstuffs, acids, alkalis, strong oxidising agents, inflammable substances and living quarters (see Definition (A), page 5)	(1) On deck only	3	E.
		(2) Tins or cans of suitable make, effectively closed	—	28 lb per container Not more than 2 cwt per case	(2) Packed in wooden cases	—	(2) do	(2) do	3	E.
		(3) Suitable metal drums (e.g steel), effectively closed.	—	—	(3) —	—	(3) do	(3) do	3	E.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
PHOTOGRAPHIC FLASHLIGHT POWDERS in which the oxidising agent is segregated from the metallic constituents Shipment of photographic flashlight powders containing chlorates, perchlorates or permanganates even if so segregated is not permitted	Readily combustible.	Tins or cans of suitable material and make, effectively closed	—	—	Packed in wooden cases.	—	On deck only. In the open.	As for cargo ships.	4	E.
PLASTICISED NITRO-CELLULOSE FLAKES with not less than 18% dibutyl phthalate plasticiser.	Readily combustible. If combustion takes place in a confined space, poisonous and inflammable gases are given off.	(1) Wooden containers of suitable make, effectively closed and suitably lined with metal or plastic.	—	—	(1) —	—	(1) On deck only.	(1) Not allowed.	4	E.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do.	(2) do	do	E.
SILICON POWDER	Combustible and forms readily inflammable mixture with supporters of combustion	(1) Glass or earthenware containers of suitable make, effectively closed.	—	2 cwt.	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Not to be stowed in the same compartment as strong supporters of combustion.	(1) As for cargo ships	6	E.
		(2) Tins or cans of suitable make, effectively closed	—	do	(2) Packed in wooden cases	—	(2) do	(2) do	do.	E.
		(3) Suitable metal drums (e.g. steel), effectively closed	—	—	(3) —	—	(3) do	(3) do	do	E.
SULPHUR (Lump, roll or stick) (Note—The remarks set out under the entry for Sulphur (Powder) on Page 198 apply to this entry also).	Will burn giving off sulphur dioxide, a suffocating gas.	(1) In bulk.	—	—	(1) —	—	(1) —	(1) Not allowed	3	—
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed with suitable protective material in wooden cases.	—	(2) On or under deck. Not in the same hold as inflammable liquids and strong supporters of combustion	(2) As for cargo ships.	6	E
		(3) Drums, casks or cases of suitable make, effectively closed	—	—	(3) —	—	(3) do	(3) do	do	E.
		(4) Double hessian bags, effectively closed.	—	2 cwt.	(4) —	—	(4) do	(4) do	do.	E.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage: Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Stowage: Other Passenger Ships (9)	Stowage: Restrictions on stowage in relation to explosives (see p. 53) (10)	Recommended Label or Stencil (11)
SULPHUR (powder) (Flowers of Sulphur).	Will burn giving off sulphur dioxide, a suffocating gas. Easily ignited by sparks.	(1) In bulk.	—	—	(1) —	—	(1) —	(1) Not allowed	3	—
		(2) Glass or earthenware containers of suitable make, effectively closed	—	—	(2) Packed with suitable protective material in wooden cases	—	(2) On or under deck. Not in the same hold as inflammable liquids and strong supporters of combustion	(2) As for cargo ships.	6	E
		(3) Drums casks or cases of suitable make, effectively closed.	—	—	(3) —	—	(3) do.	(3) do.	do.	E.
		(4) 4-ply paper bags, effectively closed	—	2 cwt.	(4) Packed in hessian outer bags	—	(4) As for (2). Loading trays should be used	(4) Not allowed.	do	E.
		(5) 5-ply paper bags, effectively closed.	—	2 cwt	(5) Packed in hessian outer bags	—	(5) do.	(5) do	do.	E.
		(6) Double crepe paper inner sacks.	—	2 cwt.	(6) Packed in hessian outer sacks with crepe paper lining attached to the inside of the sack with adhesive, the two sacks to be folded separately at the mouths and tied with string, the end of which is to be doubled back and retied.	—	(6) do	(6) do	do	E.
		(7) 3-ply paper bags, effectively closed	—	1 cwt.	(7) Packed in hessian outer bags	—	(7) do.	(7) do.	do.	E.
		(8) Paper bags, effectively closed.	—	56 lb.	(8) Suitable paper lined fibreboard cartons, effectively closed.	—	(8) do.	(8) As for cargo ships	do.	E.
		(9) Double paper bags, effectively closed.	—	56 lb	(9) Suitable fibreboard cartons, effectively closed.	—	(9) do	(9) do	do	E
		(10) 8 ply paper bags, effectively closed.	—	1 cwt.	(10) —	—	(10) do	(10) Not allowed	do	E.

Note A cargo of bulk sulphur has a liability to dust explosion Such an explosion may also occur during cleaning after discharge of the cargo The danger may be avoided by preventing the atmosphere from becoming laden with fine sulphur particles—by adequate ventilation, or when cleaning is necessary, by hosing down instead of sweeping. Care should be taken to avoid sparks and the use of naked lights.

TOE PUFF MATERIALS (box toe board used in the manufacture of boots and shoes)	(*a*) Spontaneously combustible unless complying with the test referred to in Columns 3–7 when it may be regarded as a readily combustible substance. If combustion occurs poisonous gases are given off (*b*) Various according to composition.	(*a*) *Containing Nitrocellulose.* Not to be shipped unless each consignment is accompanied by a certificate signed by an independent qualified chemist stating that a sample of the material from which the consignment is to be drawn (i) has been tested in a manner approved by the Ministry of Transport and found to be free from volatile inflammable solvents and from acids and not liable to spontaneous combustion; (ii) contains nitrocellulose having an average nitrogen content of less than 12·3%; (iii) to the best of his knowledge is free from any other substances known or suspected to cause self-heating or spontaneous combustion or decomposition. Such consignments may be packed in any suitable packing. (*b*) *Not containing Nitrocellulose.* May be carried under conditions laid down by the Ministry of Transport.					On deck. Away from inflammable cargo.	As for cargo ships	2	—
WOOD SHAVINGS or WOOD WOOL, dry, clean and free from oil.	Small fragments or dust or long fine curled wood shavings Hazard lies in its susceptibility to fire from open flame or sparks.	(1) Bales, slatted and completely bound with wire or metal bands.	—	—	(1) —	—	(1) On or under deck. Away from strong supporters of combustion and strong acids.	(1) As for cargo ships	4	—
		(2) Any suitable container	—	—	(2) —	—	(2) do	(2) do	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MAGNESIUM ALLOYS (pyrophoric)	May produce sparks on being shaken in the container. React with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make effectively closed.	—	—	(1) Packed with suitable protective material in tin-lined wooden cases	—	(1) Under deck. Away from inflammable liquids.	(1) As for cargo ships.	3	H.
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed.	—	—	(2) Packed in tin-lined wooden cases.	—	(2) do	(2) do	do.	H.
		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed	—	—	(3) —	—	(3) do	(3) do	do.	H.
OAKUM	Fibre of hemp or mixtures of hemp with other fibres and impregnated with pine tar or pitch or other similar substances. Principal risk is ready ignition by sparks, but there is also the risk of spontaneous heating	(1) Wooden boxes of suitable make, effectively closed.	—	—	(1) —	—	(1) On or under deck.	(1) do.	4	—
		(2) Bales pressed reasonably tight and bound with wire, metal hoops, rattan rope or withes	—	—	(2) —	—	(2) do	(2) do	do	—
OIL BEARING SEEDS and NUTS EXPELLERS including Sunflower Seed, Linseed, Cotton Seed, Soya Bean and Ground Nut expellers.	If these commodities are shipped wet or contain moisture there is a risk of spontaneous combustion Must be shipped dry	Dry bags.	—	—	—	—	(1) The cargo must be shipped dry and kept dry. Prior to shipment ship owners should arrange for a competent surveyor to inspect bags offered for shipment and reject any which show the slightest sign of damp or oil stain. Ships' holds should be covered if rain occurs during loading. The surveyor should also ascertain to his satisfaction, and provide a certificate to the master that since being crushed the expellers have been exposed to a dry atmosphere for at least 10 days, as experience has shown it continues to absorb moisture after crushing.	do.	2	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
OIL BEARING SEEDS and NUT EXPELLERS including Sunflower Seed, Linseed, Cotton Seed, Soya Bean and Ground Nut expellers (*Contd.*)							(2) It should be stowed in the 'tween decks or given top stowage not exceeding ten tiers in lower holds. (3) Cargo battens must be intact throughout to keep the cargo off the ship's sides, but it is also essential to insulate this cargo from bulkheads, especially stokehold bulkheads and shaft tunnel, allowing if possible a 12-inch air space. (4) Throughout the voyage particular attention should be paid to ventilation so as to ensure no dampness arises from sweat with consequent danger of spontaneous combustion. Thermometers to watch temperature of the cargo should be provided.			
OILED CLOTH, OILED PAPER, other than manufactured articles properly "aged" which are not liable to spontaneous combustion. When used as packing for other substances care should be taken that the material has been properly dried and that the various folds do not overlap so as to bring several thicknesses together	If newly manufactured and insufficiently dried is liable to spontaneous combustion	Metal-lined cases of suitable make, effectively closed.	—	—	—	—	On or under deck.	As for cargo ships	4	H.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

							Stowage			
Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p. 55) (10)	Recommended Label or Stencil (11)
RUBBER, HARD (e.g. Vulcanite or Ebonite) WASTE IN POWDER FORM.	Liable to spontaneous combustion.	(1) Suitable metal drums (e.g. steel) each lined or coated internally with paper or other suitable material, effectively closed	—	—	(1) —	—	(1) On or under deck	(1) As for cargo ships.	3	H
Note—If fully vulcanised hard rubber may be regarded as non-hazardous.		(2) Suitable barrels or cases of wood lined or coated internally with paper or other suitable material, effectively closed.	—	—	(2) —	—	(2) do	(2) do.	do.	H
		(3) 5-ply paper bags, effectively closed	—	—	(3) Packed in hessian outer bags.	—	(3) do	(3) do.	do.	H
SODIUM DITHIONITE (Sodium Hydrosulphite).	Liable to become hot and to ignite in contact with moisture and air, and also to give off an intensely irritating gas.	(1) Glass or earthenware containers of suitable make, hermetically sealed No organic matter must be used for sealing.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck, readily accessible. Away from acids, combustible cargo and living quarters (see definition (A), page 5).	(1) do.	do.	H
		(2) New tins or cans of suitable make, hermetically sealed No organic matter must be used for sealing.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do.	do.	H
		(3) New iron or steel barrels or drums of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(3) Packed in an outer wooden or fibreboard container	—	(3) do	(3) do.	do.	H
		(4) Double polythene bags each not less than ·003 inch thick, hermetically sealed No organic matter must be used for sealing.	—	1 cwt.	(4) Packed in new steel drums of not less than 22 B.G., hermetically sealed. No organic matter must be used for sealing.	1½ cwt.	(4) do	(4) do.	do.	H
SODIUM SULPHIDE (containing less than 30% water of crystallisation).	Liable to spontaneous combustion In contact with acids evolves hydrogen sulphide.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from acids.	(1) do.	4	H
		(2) Suitable metal drums (e.g. steel), effectively closed	—	—	(2) —	—	(2) do.	(2) do.	do	H
STRONTIUM ALLOYS (pyrophoric).	May produce sparks on being shaken in the container. React with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in tin-lined wooden cases.	—	(1) Under deck. Away from inflammable liquids.	(1) do	3	H
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed	—	—	(2) Packed in tin-lined wooden cases.	—	(2) do.	(2) do.	do.	H

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

							Stowage			
Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	Recommended Label or Stencil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM ALLOYS (pyrophoric) (*Contd*)		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	—	—	(3) —	—	(3) Under deck. Away from inflammable liquids	(3) As for cargo ships.	3	H
TITANIUM HYDRIDE POWDER	PACKING, STOWAGE AND LABELLING AS FOR ZIRCONIUM METAL POWDER (DRY)									
WOOLLEN SHODDY (Reworked wool which has been subjected to any processing, e.g. pulling, carding, garnetting, etc.)	For carriage without restriction, a guarantee must be obtained from the makers that the oil used in the processing satisfies the following insurance conditions:— (*a*) That the flash point of the oil used was above 340° F by open test, (*b*) that it satisfied the Mackey test; and (*c*) that the iodine value of the saponifiable matter in the oil did not exceed 90. If this guarantee cannot be given, Woollen Shoddy must be packed in:—									
		(1) Metal lined boxes of suitable make, hermetically sealed.	—	—	(1) —	—	(1) On or under deck.	(1) As for cargo ships.	4	H.
		(2) Metal containers of suitable material and make, hermetically sealed	—	—	(2) —	—	(2) do	(2) do.	do	H
ZIRCONIUM HYDRIDE POWDER	PACKING, STOWAGE AND LABELLING AS FOR ZIRCONIUM METAL POWDER (DRY)									
ZIRCONIUM METAL (dry)—POWDER Particle size to be 18 mesh or smaller	Amorphous brittle hard lustrous powder. May ignite spontaneously in air. Explosive when moistened with water.	Suitable metal drums, hermetically sealed. Must be dry when packed.	—	10 lb	Packed with slag wool or other suitable inorganic cushioning material in wooden cases.	75 lb.	On deck under cover. Away from inflammable substances, strong acids, and all combustible cargo	Not allowed	4	G
ZIRCONIUM METAL (dry)—CHIPPINGS, SPONGE, SWARF or TURNINGS Particle size to be larger than 18 mesh.	May ignite spontaneously in air. Readily inflammable. May evolve hydrogen in contact with water.	Suitable metal drums, hermetically sealed. Must be dry when packed.	—	75 lb.	—	—	do.	do.	4	E.
ZIRCONIUM METAL (dry)—FINISHED SHEET, STRIP or COILED WIRE less than 010 inch. thick.	do	Suitable watertight polythene wrappings. Must be dry when packed.	—	—	Packed in:— (*a*) fibreboard cases approved by the Ministry of Transport. Not more than 10 lb. in each case; or (*b*) wooden cases. Not more than 75 lb in each case.	—	do	do.	4	E.
ZIRCONIUM METAL (dry)—FINISHED SHEET, STRIP or COILED WIRE more than 010 inch thick.	do	Any suitable watertight container. Must be dry when packed.	—	—	—	—	do.	do	4	E.
	Note: Zirconium Metal in massive form may be regarded as non-hazardous									
ZIRCONIUM METAL (wet).	ALL PROPOSALS FOR THE SHIPMENT OF ZIRCONIUM METAL (WET) WHETHER IN POWDER OR OTHER FORM MUST BE REFERRED TO THE MINISTRY OF TRANSPORT									

	Hydrochloric Acid over 16% w/w or 1 080 Sp Gr	Sulphuric Acid over 51% w/w or 1 405 Sp Gr Chlorosulphonic Acid	Acetic Acid, Benzoic Acid, Salicylic Acid, Formic Acid, Many Free Sulphonic Acids	Triethanolamine, Di- and Tri-ethylamine and Di- and Tri methylamine Solutions.	Aniline, Pyridine, Xylidine, Toluidine.	Chlorates Permanganates {Must not be packed in the same case as uncombined Carbon (in any form) Phosphorus, Hypophosphites or Ammonia and its compounds.	Sulphur	Inflammable Liquids fl. pt. under 73° F.	Hydrogen Peroxide not over 15% w/w or 50 Vol.	Hydrogen Peroxide over 15% w/w and not over 40% w/w	Nitric Acid over 22% w/w or 1 140 Sp Gr Nitric Acid and Sulphuric Acid Mixtures.	Perchlorates, Peroxides (other than Hydrogen Peroxide and other than organic peroxides, which are PROHIBITED).	Hydrazine Compounds (other than Hydrazine Nitrate and Perchlorate, which are PROHIBITED)	Picric Acid Di Nitro-Phenol {Wetted or dry must not be packed in the same case as heavy metals or their oxides or salts.
Hydrochloric Acid over 16% w/w or 1 080 Sp Gr	—	—	—	—	—	N	—	—	—	—	—	N	—	—
Sulphuric Acid over 51% w/w or 1 405 Sp Gr Chlorosulphonic Acid	—	—	—	—	—	N	—	—	N	N	—	N	N	—
Acetic Acid, Benzoic Acid, Salicylic Acid, Formic Acid, Many Free Sulphonic Acids.	—	—	—	—	—	N	—	—	Formic Acid N remainder allowed			—	—	—
Triethanolamine, Di- and Tri-ethylamine and Di- and Tri-methylamine Solutions.	—	—	—	—	—	A	—	—	N	N	N	—	—	—
Aniline, Pyridine, Xylidine, Toluidine.	—	—	—	—	—	A	—	—	N	N	N	N	—	—
Chlorates Permanganates {Must not be packed in the same case as uncombined Carbon (in any form) Phosphorus, Hypophosphites or Ammonia and its compounds.	N	N	N	A	A	—	N	A	Permanganates N Chlorates allowed		N	—	N	N
Sulphur	—	—	—	—	—	N	—	—	—	—	—	N	N	—
Inflammable Liquids fl. pt. under 73° F.	—	—	—	—	—	A	—	—	N	N	N	—	—	N
Hydrogen Peroxide not over 15% w/w or 50 Vol.	—	N	Formic Acid N remainder allowed	N	N	Permanganates N Chlorates allowed	—	N	—	—	N	X	N	N
Hydrogen Peroxide over 15% w/w and not over 40% w/w	—	N		N	N		—	N	—	—	N	X	N	N
Nitric Acid over 22% w/w or 1 140 Sp. Gr Nitric Acid and Sulphuric Acid Mixtures	—	—		N	N	N	—	N	N	N	—	N	N	—
Perchlorates, Peroxides (other than Hydrogen Peroxide and other than organic peroxides, which are PROHIBITED).	N	N	—	—	N	—	N	—	X	X	N	—	N	N
Hydrazine Compounds (other than Hydrazine Nitrate and Perchlorate, which are PROHIBITED)	—	N	—	—	—	N	N	—	N	N	N	N	—	A
Picric Acid Di Nitro-Phenol {Wetted or dry, must not be packed in the same case as heavy metals or their oxides or salts.	—	—	—	—	—	N	—	N	N	N	—	N	A	—

NOTE 1

Where the letter "N" appears at the intersection of a horizontal band with a vertical column, a substance listed at the left hand of the horizontal band may not be packed in the same case with a substance listed at the head of the vertical column This rule is however subject to the modification that in certain cases the significance of "N" is specifically shown to apply only to one substance or group of substances For example, Pyridine or Permanganates may not, but Chlorates may be packed in the same case as Hydrogen Peroxide.

NOTE 2

Where the letter "A" appears at the intersection of a horizontal band with a vertical column, a substance listed at the left hand of the horizontal band is allowed to be packed in the same case with substances listed at the head of the vertical column, provided that in the case of a solid a substance in the left band column is separated by a suitable partition from substances listed at the head of the vertical column. If the substance is a liquid, it must be contained in a separate and suitable internal case

NOTE 3

Where the letter "X" appears at the intersection of a horizontal band with a vertical column, hydrogen peroxide is prohibited in the same case as metallic peroxides but is allowed in the same case as perchlorates.

NOTE 4

Hydrazine compounds should be segregated from caustic alkalis and strong oxidising agents

SECTION 10

(Category (x) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Other Dangerous or Hazardous Substances

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ACETALDEHYDE AMMONIA (Aldehyde Ammonia).	Pungent smelling crystalline solid which distils at 100° C., without decomposition. Decomposed by acids liberating aldehyde, a volatile inflammable liquid which is irritating to the respiratory tract.	(1) Glass or earthenware containers of suitable make, hermetically sealed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from acids.	(1) As for cargo ships.	5	—
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.	—	(2) do.	(2) do.	do	—
		(3) Tins or cans of suitable make, hermetically sealed.	—	—	(3) Packed in wooden cases	—	(3) do	(3) do.	do.	—
		(4) Iron or steel barrels or drums of suitable make, hermetically sealed.	—	—	(4) —	—	(4) do.	(4) do.	do.	—
AEROSOLS (Low pressure aerosol dispensers).	All proposals for shipment should be referred to the Ministry of Transport. Packing, stowage and labelling will depend upon the properties of the propellant and the other constituents.									
AMMONIUM DI-NITRO-ORTHO-CRESYLATE (Crystalline).	Supporter of combustion. Poisonous.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Not in the same hold as inflammable substances and not in contact with lead or compounds of lead. Away from food and foodstuffs.	(1) As for cargo ships.	4	C.
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do.	(2) do.	do	C.
		(3) Suitable barrels, or cases of wood with polythene liners, effectively closed	—	—	(3) —	—	(3) do	(3) do.	do.	C.
		(4) Suitable metal drums (e.g. steel), effectively closed	—	—	(4) —	—	(4) do.	(4) do.	3	C.

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RECORD OF AMENDMENTS

Amendment No 1	April, 1958
Amendment No. 2	October, 1958
Amendment No 3	May, 1959
Amendment No 4	June, 1960

(79823) Wt. 2793 8,000 7/60 Hw

PRINTED IN ENGLAND

~~OP. 1100-102-92~~
OP. 1100.102.020 (2)

THE CARRIAGE OF DANGEROUS GOODS AND EXPLOSIVES IN SHIPS

Amendment List No. 3 to the 1957 Report of the Standing Advisory Committee

Pages: 53–56
131–132
157–158 The attached pages replace the old pages which have similar numbers.
179–180
209–210
229a–229b Add two new pages.

Page 6, para. 10.
Delete " pages 228 and 229 ". Insert " pages 228 to 229b ".

Page 91—Perchloric Acid.
Col. 5. Delete " 5 pints " and insert " 6 pints ".

OP
23

Ministry of Transport and Civil Aviation,
May, 1959.

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PRICE *3s. 6d.* NET

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RESTRICTIONS ON STOWAGE OF CERTAIN MATERIALS IN SHIPS CARRYING EXPLOSIVES

Certain materials will be subject to restrictions in stowage as given below:—

This restriction is indicated by the number in the appropriate column of the tables When explosives are stowed on deck their position in relation to dangerous goods will be governed by restrictions 2 or 3 where these are applicable. Dangerous goods normally subject to restriction 4 will, when explosives are stowed on deck, be regarded as subject to restriction 3.

1. May not be carried in an explosives ship.

2. Must, whether stowed on or under deck, be separated from any explosives by the engine and boiler rooms space If carried in a shelter deck space there must, in addition, be an efficient fire stop (see Note in para. 4 below) between the place where the goods are carried and the hold or holds containing the explosives

3. Must, if stowed under deck or in a sheltered deck space, be separated from the explosives by the engine and boiler rooms space or by one complete hold in a horizontal plane and if in a shelter deck space, there must in addition be an efficient fire stop (see Note in para. 4 below) between the place in which the goods are carried and the hold in which the explosives are stowed. If carried on the open deck they must not be directly above the hold in which the explosives are stowed, and if the explosives are in the compartment immediately below the deck, the goods must be separated from them by a distance of at least one compartment.

4. May not be stowed in the same hold with any explosives and, if on deck, may not be directly above explosives stowed in the compartment immediately below the deck. If carried in a shelter deck space there must in addition be an efficient fire stop between the dangerous goods and the hold in which the explosives are stowed.

Note.—By an efficient fire stop is meant a complete steel bulkhead or one in which the openings are effectively closed by a stout steel plate or plates secured to the bulkhead.

5. May be stowed in the same hold, but not in the same compartment, with explosives of Groups 5 and 7, and with the following explosives in Groups 6 and 8:—

Group 6.
Safety class ammunition.
Fuzes.
Fuze, instantaneous.
Games
Heads, rocket, radar-echo.
Igniters (all natures).
Primers, percussion

Group 8.
Grenades, H E.
Petards
Projector ammunition, practice.

Group 6 (contd.).
Primers, electric.
Primers, electric and percussion.
Projectiles, hedgehog, weighted.
Projectiles, practice, hedgerow.
Shell, boxed (all natures).
Shot, with tracer.
Tubes (all natures).

They may not be stowed in the same hold with any other explosives unless the explosives are packed in portable containers, Type A or B and are stowed in a separate compartment This rule also applies to those commercial explosives shown in Sub-section C having the same designation or the same equivalent Government Explosives Group.

6. May be stowed in the same hold with any explosives but in a separate compartment.

7. May be stowed in the same hold with any explosives but not in the same compartment with explosives other than those of Groups 5 and 7, those of Groups 6 and 8 listed in restriction 5, and any contained in portable container Type A or B. They may not overstow any explosives other than shell, plugged (Group 5) and bombs, aircraft (Group 7) This rule also applies to those commercial explosives shown in Sub-section C having the same designation or the same equivalent Government Explosives Group.

The following goods, which are not dangerous, require a degree of segregation from explosives. The necessary restrictions are given in the table below.—

Material	*Restriction*
Ammonium salts, other than those included in the schedules	6
Guano	5
Lime, slaked	6
Perborates	7
Percarbonates	7
Persulphates	6
Sulphides, other than those included in the schedules	5

Note—When the proximity of Safety Class Ammunition only has to be considered restriction 4 (5 in the case of Safety Cartridges only) may be regarded as taking the place of restrictions 2 and 3 and restriction 6 as taking the place of restriction 4.

(Category (ii) of Rule 2(1) of the Merchant Shipping (Dangerous Goods) Rules, 1952)

Compressed Gases

SUB-SECTION A

1. This Section deals with compressed gases under the following headings.—
   (1) Permanent Gases—gases which remain gaseous except at very low temperatures
   (2) Liquefied Gases—gases which remain liquid under pressure at normal temperatures
   (3) Dissolved Gases—gases dissolved in a solvent and absorbed in a porous material.

2. These gases are usually carried in steel cylinders, but certain of them may be carried in large welded containers, or in special containers or tanks which have been or may be approved by the Ministry of Transport and Civil Aviation The types of container which may ordinarily be used for particular gases are stated in Sub-section B of this Section

3. The hazards involved in the carriage of compressed gases are—
   (1) The physical damage to the surroundings which may result from the bursting of a container.
   (2) The danger arising from the nature of the gas should it escape. A gas may possess any or a combination of these dangerous properties; it may be inflammable and form explosive mixtures with air; it may be poisonous; it may corrode metals; or it may cause self ignition of certain substances
   (3) Some gases have no deleterious properties themselves but if present in excess will cause suffocation by reducing the proportion of oxygen in the air.

Gases vary in density compared with air Some are heavier than air and tend to remain at the bottom of the compartment while others are lighter than air and will rise and diffuse more readily

General Requirements

4. The following conditions apply, except where specially indicated, to all gases contained in steel cylinders, or large welded containers:—
   (1) The cylinders or containers and their valves shall comply with one of the appropriate specifications or otherwise be approved by the Ministry of Transport and Civil Aviation. Reference to the appropriate specification is made against the name of the gas in Sub-section B of this Section
   (2) This requirement is relaxed for certain foreign cylinders loaded at a foreign port. In such cases, the carriage of cylinders is permitted if the cylinders are constructed, maintained and filled in accordance with an appropriate specification approved by the Government concerned.
   (3) The valves of cylinders or containers shall be protected against damage either by the design of the cylinder or container or by the provision of a stout metal cap or metal cover securely attached to the body of the cylinder or container The metal cap or cover shall be so made that it is nowhere in actual contact with any part of the valve or valve body Every metal cap or cover, except in the case of cylinders for hydrocyanic acid, shall be provided with a vent of such size as to prevent gas pressure inside the cap or cover. Small cylinders packed in stout cases which will adequately protect the valves need not be provided with caps or covers.
   (4) The outlet of valves of cylinders or containers for inflammable gases shall be provided with left-handed screw threads for the pipe or other connections.
   (5) Oil or similar lubricant shall not be used on any valves or other fittings of any cylinders or containers except in the case of acetylene.
   (6) Each cylinder or welded container shall have been periodically examined and tested in accordance with the following conditions:—
      (i) Permanent gas and high pressure liquefiable gas cylinders.—

      Each cylinder shall at intervals not greater than five years be submitted to the hydraulic stretch test. The proof pressure to be applied, and the rejection limit, shall be those specified in the appropriate manufacturing specification. Prior to the test, the cylinder shall be thoroughly cleaned—external paint, if in good condition, need not be removed—and examined externally and, as far as practicable, internally by a competent person for surface defects, corrosion or foreign matter Where excessive internal rust or foreign matter is observed the cylinder shall be cleaned by methods such as wire-brushing, shot blasting or rumbling, scraping, boiling or steaming or be heated to a temperature not exceeding 300° C. After cleaning each cylinder shall again be examined. Each cylinder shall be thoroughly dried before being refilled with gas

      The above requirements shall be deemed to be satisfied if the cylinder is examined and tested on the first receipt of the cylinder by the filler after a lapse of five years from either the date of manufacture or the date of the last periodic examination and test.

      (ii) Low pressure liquefiable gas cylinders or welded containers other than these provided with a manhole or handhole.—

      Each cylinder or container shall be examined externally at the time of filling, and any defective cylinder or container shall be segregated. All segregated cylinders or containers, and every other cylinder or container at intervals not greater than five years, shall be thoroughly cleaned—external paint, if in good condition, need not be removed—and examined externally and, as far as practicable, internally by a competent person for surface defects, corrosion or foreign matter Where excessive internal rust or foreign matter is observed the cylinder or container shall be cleaned by methods such as wire-brushing, shot blasting or rumbling, scraping, boiling or steaming, or be heated to a temperature not exceeding 300° C. After cleaning each cylinder or container shall again be examined Cylinders or containers that have been cleaned by boiling or steaming shall be thoroughly dried before being refilled with gas. Each cylinder or container shall also be weighed. If the reduction in weight exceeds 5 per cent. of the original tare weight the cylinder or container shall be made unserviceable for containing gas under pressure. This rejection requirement shall be waived in the case of cylinders or containers manufactured with a weight corrosion allowance of not less than 15 per cent.

The above requirements shall be deemed to be satisfied if the cylinder or container is examined and weighed on the first receipt of the cylinder or container by the filler after a lapse of five years from either the date of manufacture or the date of the last periodic examination.

Each cylinder or container shall at intervals not greater than ten years (five years in the case of those cylinders or containers used for the conveyance of the corrosive gases—carbonyl chloride (phosgene), chlorine, hydrogen chloride, hydrogen fluoride, hydrogen sulphide, nitrosyl chloride and sulphur dioxide) be subjected to a proof pressure test. The proof pressure to be applied shall be that specified for the hydraulic stretch test in the appropriate manufacturing specification. The proof pressure shall be applied for not less than ten minutes and any cylinder or container in which there is a reduction of pressure shall be made unserviceable for containing gas under pressure.

The above requirement shall be deemed to be satisfied if the cylinder or container is examined and tested on the first receipt of the cylinder or container by the filler after a lapse of five or ten years, as the case may be, from either the date of manufacture or the date of the last periodic examination and test required by the above clause.

(iii) Low pressure liquefiable gas large welded containers provided with a manhole.—

Each container shall at intervals not greater than five years be examined externally and internally by an inspecting authority approved by the appropriate authority. If the inspecting authority is satisfied that the container may safely be used for the conveyance of a compressed gas for a further period of five years or any less period he should furnish the owner of the container with a certificate to that effect.

(iv) Low pressure liquefiable gas large welded containers provided with a handhole.—The requirements specified for large welded containers provided with a manhole may also be applied for containers provided with a handhole of such a size and in such a position as to permit the examination of the whole of the interior of the container either directly or by means of mirrors. If these conditions cannot be fulfilled the requirements specified for low pressure liquefiable gas cylinders or welded containers other than those provided with a manhole or handhole shall be applied.

On completion of each periodic examination and test each cylinder or welded container shall be stamped with marks and figures indicating the person or firm who has carried out the examination and test and the date of examination and test. The latter may be indicated by a month and year or by the year with a symbol to denote the quarter of the year.

(7) Cylinders or large welded containers shall be legibly marked or labelled with the name of the gas and the name and address of the person or firm by whom it was compressed. Cases in which cylinders are packed shall be legibly marked or labelled as above in red except where cases are coloured red all over when the marking or labelling may be of any suitable colour.

(8) (i) The pressure in the cylinder at 45° C. (113° F.) (temperate climates) or at 65° C. (149° F.) (tropical climates) must not exceed three-quarters of the hydraulic test pressure to which the cylinder is submitted.

(ii) The liquid portion of the gas, if any, must not occupy more than 95 per cent. of the capacity of the cylinder at 45° C. (113° F.) (temperate climates) or 65° C. (149° F.) (tropical climates).

Permanent Gases

5. For permanent gases, in addition to the conditions laid down in paragraph 4 above, the following additional conditions are prescribed:—

(1) The working or internal pressure in any cylinder shall not exceed that shown for each gas in Sub-section B (1) of this Section, measured at 15·5° C. (60° F.).

(2) The recommendations contained in paragraph 4 and paragraph 5 (1) above do not apply to special light alloy steel cylinders containing permanent gases. Such cylinders, of capacity not greater than 20 cubic feet of free gas, may be required in particular cases where it is highly important to have very light small cylinders. They must always be packed in stout cases and their acceptance for conveyance will be subject to the permission of the Ministry of Transport and Civil Aviation, and to conditions which are laid down in the letter of approval.

Liquefied Gases

6. For liquefied gases, in addition to the conditions laid down in paragraph 4 above, the following additional conditions are prescribed:—

(1) Each cylinder or container shall be completely emptied and thoroughly dried on each occasion before being charged.

(2) Care must be taken that the gas is freed from moisture.

(3) The appropriate filling ratio (i.e. the weight of gas in pounds permitted for each pound of water capacity of the cylinder or container) set out in Sub-section B of this Section for each gas, and for the nature of the voyage to be undertaken, must be observed. The accuracy of each charge shall be determined by weighing.

(4) A notice shall be attached to each cylinder and/or case, and each large welded container, to indicate that it should be kept as cool as possible.

(5) The recommendations contained in paragraph 4 and in sub-paragraphs 6 (1), (2), (3) and (4) do not apply to the special containers for certain liquefied gases such as glass syphons for sulphur dioxide, "sparklets" for carbon dioxide, etc., conditions concerning which are given under the name of the gas in Sub-section B of this Section.

(6) The assumed working pressures at 45° C. and 65° C. listed in columns 6 and 8 of Sub-section B of this Section are those reported for pure gases and will need to be increased if more volatile impurities are liable to be present. They have been included as a guide for the design of containers for low pressure liquefiable gases. In the

high pressure liquefiable gases, viz., carbon dioxide, nitrous oxide and chlorotrifluoromethane the values apply only to the specified filling-ratios and serve to indicate that cylinders designed for a working pressure of 1,800 p.s.i. at 15·5° C. will satisfy the general requirements of paragraph 4 (8) (i). In the special case of carbon dioxide, a "tropical" filling ratio of 0·667 is permitted, notwithstanding this requirement, provided the cylinder is fitted with a bursting disc which will discharge the contents before a pressure of 2,850 p.s.i. is attained.

Dissolved Gases

7. For dissolved gases, in addition to the conditions laid down in paragraph 4, sub-paragraphs (1), (2) and (3) above, the following additional conditions are prescribed:—

(1) Acetylene shall be carried only in steel cylinders containing a homogeneous porous substance and with or without acetone or other solvent.

(2) Drawings showing the design of each type of cylinder proposed to be used shall be deposited with the Administration and no cylinder shall be used unless it is of a design approved in writing by the Administration.

(3) The porous substance shall be similar in all respects to a sample deposited with the Administration.

(4) The porous substance shall fill as completely as possible the cylinder and the porosity of the substance shall not exceed 80 per cent.

(5) The acetone or other solvent used shall not be capable of chemical reaction with the acetylene or with the porous substance or with the metal of the cylinder, and the quantity of acetone or other solvent used shall be such that when fully charged with acetylene it shall not completely fill the porosity of the porous substance at any temperature likely to be met with in ordinary practice or use.

(6) The pressure of the gas in the cylinder shall not exceed two hundred and twenty-five (225) pounds to the square inch at a temperature of sixty (60) degrees Fahrenheit. Provided that no cylinder capable when empty of containing one cubic foot of water, or more, which has the ends secured to the body by welding only, and no cylinder in which the porous substance is used without acetone or other solvent, shall be charged to a pressure exceeding one hundred and fifty (150) pounds to the square inch at a temperature of sixty (60) degrees Fahrenheit.

This condition shall not apply to cylinders used exclusively for marine lighting by a General or Local Lighthouse Authority.

(7) Every cylinder shall be tested by hydraulic pressure to a pressure of not less than four times the pressure to which the cylinder is to be subjected in use, such hydraulic pressure to be maintained for a period of fifteen minutes, and no cylinder shall be used which on the first occasion of its being subjected to this test shall show any permanent stretch.

(8) The valves of cylinders shall not contain more than seventy (70) per cent. of copper in their composition.

(9) Every cylinder shall have permanently and conspicuously marked upon it or upon a brass plate secured to it the name of the manufacturer and an indication that it has been authorised by the appropriate Administration. Every cylinder shall bear a label giving the date when it was last charged, together with the name of the firm by whom it was charged, the address of the last charging station, and the maximum pressure allowed in the cylinder.

(10) Every cylinder capable when empty of containing one cubic foot of water, or more, manufactured after the 1st April, 1919, shall have stamped upon it the name or trade mark of the manufacturer and the serial number of the cylinder.

Miscellaneous

8. In the case of special containers for which the approval of the Ministry of Transport and Civil Aviation is required, full particulars should be submitted including the name of the gas it is desired to transport, details of design, detailed specification of the containers and the proposed pressure and/or filling ratios for the nature of the voyage to be undertaken. If such containers are approved for shipment, the special conditions as to maintenance, periodical inspection and test of the containers, filling ratios and stowage conditions prescribed in the letter of approval must be complied with.

9. Cylinders containing certain inflammable or poisonous gases, and gases in large welded containers, as indicated in Sub-section B of this Section, may not be carried in passenger ships.

10. Except where specially provided for in Sub-section B, not more than 12 tons of gas in large welded containers may be carried in any cargo ship without the special permission of the Ministry of Transport and Civil Aviation.

11. In stowing cylinders or containers of gas the following general conditions shall be observed:—

(1) The cylinders or containers should preferably be stowed under cover in well ventilated spaces and should be well secured to prevent movement; if carried on the open deck they shall be adequately secured and protected against the risk of damage in heavy weather. In either case, they shall be kept from direct contact with the ship's sides or bulwarks by the interposition of dunnage or cargo of a suitable character or by other effective means.

(2) Cylinders or containers filled with certain gases specified in the schedule shall be stowed away from corrosive or inflammable liquids.

(3) Except where specially provided for in Sub-section B, cylinders or containers containing any gas shall not be overstowed with heavy cargo, nor must they be carried in or over a hold containing coal without the special permission of the Ministry of Transport and Civil Aviation.

(4) Cylinders or containers other than those containing an inert gas shall be stowed away from any readily combustible solid or strong supporter of combustion.

(5) Cylinders or containers other than those containing an inert gas should be stowed away from living quarters as specified in Sub-section B of this Section.

(6) The special stowage requirements for each particular gas are detailed in Sub-section B of this Section.

12. In ships carrying explosives the conditions set out in Section 1 (page 53) and indicated in Sub-section B of this Section must be observed.

13. Empty cylinders must have their valves securely closed before being sent forward for shipment.

14. Inert gases, helium, argon, etc., carried in glass cylinders at atmospheric pressure are regarded as non-hazardous.

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance (1)	Characteristic Properties (2)	Details of Main or Inner Packing (3)	Minimum Air Space (4)	Maximum Quantity of Substance in Inner Container or Net Weight of Contents (5)	Details of Protective or Outer Packing (6)	Maximum Gross Weight of Package Allowed (7)	Stowage			Recommended Label or Stencil (11)
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater (8)	Other Passenger Ships (9)	Restrictions on stowage in relation to explosives (see p 53) (10)	
MERCURIC NITRATE, MERCUROUS NITRATE (see also Section 7, Strong Supporters of Combustion)	Crystals or powder which become liquid by absorbing moisture from the air. Strong oxidising agent. Dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships.	None	—
		(2) do.	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do.	do	—
		(3) Tins or cans of suitable make, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases	—	(3) do.	(3) do.	do	—
		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) do	(4) do.	do	—
MERCURY COMPOUNDS excluding Mercurous Chloride, which is not poisonous, and those mentioned above, including the following:— *Note.* Where reference is made to a compound of mercury, it includes mercurous and mercuric. MERCURY ACETATE, MERCURY-AMMONIUM CHLORIDE, (contd.)	These are mostly in the form of crystals or powders and are dangerous if taken internally or in the form of powder through the respiratory organs or by excessive contact with the skin.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases. If liquid, not more than 10 gal in each case	—	(1) do.	(1) do.	do.	—
		(2) do.	—	—	(2) Packed singly in:— (*a*) wicker hampers with wicker bonnets ; or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material ; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do	(2) do	do	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
MERCURY COMPOUNDS (*contd*) MERCURY, BENZOATE, MERCURY BISULPHATE, MERCURY BROMIDE, MERCURY GLUCONATE, MERCURY IODIDE, MERCURY NUCLEATE (Mercurol), MERCURY OLEATE, MERCURY OXIDE, MERCURY OXYCYANIDE, MERCURY POTASSIUM IODIDE, MERCURY SALICYLATE, MERCURY SULPHATE, MERCURY THIOCYANATE.		(3) Suitable vulcanised rubber lined cartons, effectively closed with a double cap.	—	—	(3) Packed with suitable protective material in wooden cases Not more than 1 cwt. in each case.	—	(3) On or under deck. Away from food and foodstuffs.	(3) As for cargo ships.	None.	—
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed with suitable protective material in wooden cases.	—	(4) do.	(4) do.	do	—
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) do.	—	(5) do.	(5) do	do.	—
		For solids only (6) Suitable polythene bags, effectively closed.	—	—	(6) Packed with suitable protective material in wooden cases Not more than 1 cwt. in each case.	—	(6) do	(6) do	do	—
		(7) Suitable barrels or cases of wood, lined or coated internally with paper or other suitable material, effectively closed	—	—	(7) —	—	(7) do	(7) do.	do	—
		(8) Double-walled paper bags, securely closed.	—	—	(8) Tightly packed in outer cases.	—	(8) do.	(8) do.	do.	—
Note.—Seed dressings in dry powder form, containing not more than 8 5% mercury, may be regarded as non-hazardous, but should be stowed away from food and foodstuffs										
NICOTINE, NICOTINE COMPOUNDS AND PREPARATIONS THEREOF; incl. NICOTINE HYDROCHLORIDE, and solutions thereof	Liquids or solids. The solid forms are deliquescent.	(1) Glass or earthenware containers of suitable make, effectively closed.	5% if liquid	2½ gal. if liquid.	(1) Packed with effective absorbent material in wooden cases If liquid not more than 10 gal. in each case	—	(1) On or under deck. Away from food and foodstuffs	(1) As for cargo ships	None.	C.
		(2) do	5% if liquid.	2½ gal. if liquid	(2) Packed with effective absorbent material in fibreboard containers approved by Ministry of Transport and Civil Aviation If liquid not more than 7½ gal. in each case	—	(2) do	(2) do.	do.	C.
		(3) Tins or cans of suitable make, effectively closed.	5% if liquid.	—	(3) As (1) above	—	(3) do	(3) do	do	C.
		(4) do	5% if liquid	—	(4) As (2) above.	—	(4) do	(4) do	do	C.
		(5) Suitable metal drums (e.g. steel), effectively closed.	5% if liquid	100 gal. if liquid	(5) —	—	(5) do	(5) do.	do.	C.

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53).	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CALCIUM CYANAMIDE (Nitrolim) Containing—	Powder. Usually contains calcium carbide present as an impurity. Evolves ammonia and acetylene (highly inflammable gas) in contact with water									
(*a*) Not more than 0·5% of calcium carbide.		(1) Hessian sacks with a double lining of paper impregnated with tar or twill bags coated with tar internally and lined with strong crepe paper.	—	—	(1) —	—	(1) Keep dry. Under deck away from acids. Away from living quarters (see definition (B), page 5).	(1) As for cargo ships.	5	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases	—	(2) do.	(2) do	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do	do	—
(*b*) More than 0·5% of calcium carbide.		(1) Tins or cans of suitable make, effectively closed.	—	Not more than 2 cwt per case.	(1) Packed in wooden cases.	—	(1) do.	(1) do	4	G.
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	2 cwt.	(2) —	—	(2) do.	(2) do.	do.	G.
CALCIUM HYPOCHLORITE (Bleaching Powder, Chloride of Lime) Not exceeding 40% available Chlorine w/w	In contact with damp air evolves chlorine gas which, though easily detected by smell, would be dangerous in a confined space. Corrosive when damp.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) Keep dry. On or under deck. Away from acids, ammonium compounds and living quarters (see definition (A), page 5).	(1) do	5	—
		(2) do	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets; (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container; (*c*) strong iron hampers with iron bonnets, with not less than ½ inch of packing material; the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—
		(3) Tins or cans of suitable make, effectively closed.	—	28 lb.	(3) Packed in wooden cases, or fibreboard cases approved by Ministry of Transport and Civil Aviation	—	(3) do	(3) do.	do	—

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 33)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CALCIUM HYPOCHLORITE (*Contd.*)		(4) Suitable metal drums (e.g. steel), effectively closed.	—	—	(4) —	—	(4) Keep dry On or under decks Away from acids, ammonium compounds and living quarters (see definition (A), page 5)	(4) As for cargo ships.	3	—
		(5) Zinc-lined cases, effectively closed.	—	—	(5) —	—	(5) do	(5) do	do	—
		(6) *For voyages in temperate climates* Suitable wooden barrels, effectively closed.	—	—	(6) —	—	(6) do	(6) do	do.	—
CALCIUM HYDRIDE	Greyish white lumps or powder Reacts with water, acids or moist air with evolution of hydrogen. Burns fiercely when heated.	Steel drums subject to the following conditions Each steel drum must be made of sheet of not less than ·064 inch thick It must be watertight and closed with an air and watertight lid The lid should be of such construction that the neck of the drum closes on to a rubber or other suitable composite seating material carried in the lid. The lid should be securely fastened by an efficient means	—	1 cwt.	—	—	Keep dry On deck only Away from acids, alkalies and external sources of heat	Not allowed	3	G
CALCIUM OXIDE (Lime, unslaked, quick lime).	Solid which crumbles and evolves much heat in contact with water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) Keep dry On or under deck. Away from ammonium salts	(1) Under deck.	3	—
		(2) Tins or cans of suitable make, effectively closed.	—	—	(2) Packed in wooden cases.	—	(2) do	(2) do	do.	—
		(3) Suitable metal drums (e.g. steel), effectively closed.	—	—	(3) —	—	(3) do.	(3) do	do	—
		(4) Suitable wooden barrels, or suitable fibreboard drums, effectively closed.	—	—	(4) —	—	(4) do.	(4) do	do	—
		(5) Hessian bags, effectively closed. On voyages within Home Trade limits as defined in Section 742, M.S.A., 1894.	—	—	(5) —	—	(5) do	(5) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STRONTIUM NITRATE	Crystals or crystalline powder. Soluble in water.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, powdered metals food and foodstuffs	(1) As for cargo ships	6	F.
		(2) Glass or earthenware containers of suitable make, effectively closed.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or (c) strong iron hampers with iron bonnets with not less than ½ inch of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	F.
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case.	—	(3) do	(3) do.	do.	F.
		(4) Tins or cans of suitable make, effectively closed.	—	—	(4) Packed in wooden cases	—	(4) do.	(4) do	do.	F
		(5) Suitable metal drums (e.g. steel), effectively closed.	—	—	(5) —	—	(5) do.	(5) do.	do	F.
		(6) Paper-lined wood or fibreboard casks or kegs of suitable make, effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do	F.
NITRITES :— POTASSIUM NITRITE, SODIUM NITRITE.	Crystals or sticks Decompose in contact with acids, evolving fumes of oxides of nitrogen. Involved in a fire, will intensify the burning of all combustible materials	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates, thiocyanates, cyanides and ammonium compounds.	(1) do.	5	F.
		(2) do.	—	—	(2) Packed singly in :— (a) wicker hampers with wicker bonnets ; or (b) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container ; or	—	(2) do	(2) do	do	F.

(continued overleaf)

(*For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9*)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/100th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
POTASSIUM NITRITE, SODIUM NITRITE (*Contd.*)					(*c*) strong iron hampers with iron bonnets with not less than ½ in of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper.					
		(3) Suitable polythene bags, effectively closed.	—	—	(3) Packed with suitable protective material in wooden cases. Not more than 1 cwt in each case.	—	(3) On or under deck. Away from all combustible cargo, strong acids, food, foodstuffs, thiosulphates, thiocyanates, cyanides and ammonium compounds.	(3) As for cargo ships.	5	F.
		(4) Suitable vulcanised rubber lined cartons, effectively closed with a double cap	—	—	(4) Packed with suitable protective material in wooden cases. Not more than 1 cwt. in each case	—	(4) do.	(4) do	do.	F.
		(5) Tins or cans of suitable make, effectively closed.	—	—	(5) Packed in wooden cases.	—	(5) do.	(5) do.	do.	F.
		(6) Suitable metal drums (e.g steel), effectively closed.	—	—	(6) —	—	(6) do.	(6) do.	do.	F.
PERBORATES :— SODIUM PERBORATE (except the Tetrahydrate, which is regarded as non-hazardous)	Powder.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases	—	(1) On or under deck. Away from strong acids.	(1) do.	6	—
		(2) do.	—	—	(2) Packed singly in — (*a*) wicker hampers with wicker bonnets, or (*b*) stout slatted crates lined with suitable protective material and with adequate protection for the neck of the container, or (*c*) strong iron hampers with iron bonnets with not less than ½ in of packing material, the whole to be contained in a case, crate or hamper unless the diameter of the base of the metal hamper is approximately equal to the diameter of the top of the hamper	—	(2) do.	(2) do.	do.	—

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Minimum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
SODIUM DITHIONITE (Sodium Hydrosulphite).	Liable to become hot and to ignite in contact with moisture and air, and also to give off an intensely irritating gas.	(1) Glass or earthenware containers of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or und readily no Away from combustible ca living quarte definition (A),			
		(2) New tins or cans of suitable make, hermetically sealed. No organic matter must be used for sealing.	—	—	(2) Packed in wooden cases	—	(2) do			
		(3) New iron or steel barrels or drums of suitable make, hermetically sealed No organic matter must be used for sealing.	—	—	(3) Packed in an outer wooden or fibreboard container.	—	(3) do.			
		(4) Double polythene bags each not less than ·003 inch thick, hermetically sealed No organic matter must be used for sealing.	—	1 cwt	(4) Packed in new steel drums of not less than 22 B.G., hermetically sealed. No organic matter must be used for sealing.	1½ cwt.	(4) do.			
SODIUM SULPHIDE (containing less than 30% water of crystallisation)	Liable to spontaneous combustion. In contact with acids evolves hydrogen sulphide.	(1) Glass or earthenware containers of suitable make, effectively closed.	—	—	(1) Packed with suitable protective material in wooden cases.	—	(1) On or und Away from ac			
		(2) Suitable metal drums (e.g. steel), effectively closed.	—	—	(2) —	—	(2) do			
STRONTIUM ALLOYS (pyrophoric).	May produce sparks on being shaken in the container. React with water to form hydrogen causing danger of explosion and firing.	(1) Glass or earthenware containers of suitable make effectively closed.	—	—	(1) Packed with suitable protective material in tin-lined wooden cases	—	(1) Under deck from inflamm quids.			
		(2) Tins or cans of suitable make, filled with carbon dioxide and effectively closed.	—	—	(2) Packed in tin-lined wooden cases.	—	(2) do			
		(3) Specially approved metal barrels or drums filled with carbon dioxide and effectively closed.	—	—	(3) —	—	(3) do			
TOE PUFFS (box toe board used in the manufacture of boots and shoes)	Consist of several layers of fabric impregnated with cellulose nitrate, solvent, rosin and dye. Liable to spontaneous combustion.	Tins or cans of suitable make, hermetically sealed.	—	—	Packed in wooden cases	—	On or unde Away from mable cargo			

Note.—There are no restrictions on Toe Puff material which has been tested by the Ministry of Transport and Civil Aviation and found not liable t

SUNFLOWER SEED EXPELLERS.	If this commodity is shipped wet or contains moisture there is a risk of spontaneous combustion. Must be shipped dry.	Dry bags.	—	—	—	—	(1) The cargo shipped dry a dry Prior to sl ship owners arrange for a tent surveyor			

(continued overleaf)

(For the carriage of Laboratory Chemicals and/or Medicinal Preparations in Limited Quantities, see Section 9)

Substance	Characteristic Properties	Details of Main or Inner Packing	Maximum Air Space	Maximum Quantity of Substance in Inner Container or Net Weight of Contents	Details of Protective or Outer Packing	Maximum Gross Weight of Package Allowed	Stowage			Recommended Label or Stencil
							Cargo Ships and passenger ships which are certified to carry a number of passengers not exceeding 25 or 1/10th the number of feet in the ship's registered length whichever is the greater	Other Passenger Ships	Restrictions on stowage in relation to explosives (see p. 53)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SUNFLOWER SEED EXPELLERS (*Contd.*).							spect bags offered for shipment and reject any which show the slightest sign of damp or oil stain. Ships' holds should be covered if rain occurs during loading. The surveyor should also ascertain to his satisfaction, and provide a certificate to the master that since being crushed the expellers have been exposed to a dry atmosphere for at least 10 days, as experience has shown it continues to absorb moisture after crushing (2) It should be stowed in the 'tween decks or given top stowage not exceeding ten tiers in lower holds (3) Cargo battens must be intact throughout to keep the cargo off the ship's sides, but it is also essential to insulate this cargo from bulkheads, especially stokehold bulkheads and shaft tunnel, allowing if possible a 12-inch air space. (4) Throughout the voyage particular attention should be paid to ventilation so as to ensure no dampness arises from sweat with consequent danger of spontaneous combustion Thermometers to watch temperature of the cargo should be provided.			

PRINTED IN GREAT BRITAIN

APPENDIX D. *(contd)*

(Amendment No. 3)
MAY, 1959

ALTERNATIVE LABELS

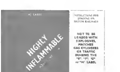
See Appendix B, Part 1, para. 10

The Standing Advisory Committee on the Carriage of Dangerous Goods and Explosives in Ships, British Transport Commission and The Association of British Chemical Manufacturers have agreed on the designs of dual purpose labels which can be used instead of the separate rail and shipping labels, on packages which are to be carried by rail in the United Kingdom and by sea.

These alternative labels are illustrated below. The size of the left hand panels should be not less than 4 ins. by 4 ins. The loading instructions in the right hand panels are for the use of British Railways only, and do not indicate the appropriate stowage on board ship.

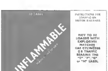
There are no alternative labels to the shipping labels A3 and B; there are two alternatives to the shipping label for Poisons, as British Railways subdivide this class into groups, for which different rail loading instructions must be shown.

LABEL A^1

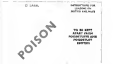

A1 LABEL
HIGHLY INFLAMMABLE
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES, MATCHES GAS CYLINDERS OR TRAFFIC BEARING THE "E", "F", "G" or "H" LABEL

Note: The flash point to be inserted may be the actual one or within one of the following ranges:
60°F.—72°F.
40°F.—59°F.
20°F.—39°F.
0°F.—19°F.
Under 0°F.

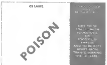
LABEL A^2


A2 LABEL
INFLAMMABLE
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES MATCHES GAS CYLINDERS OR TRAFFIC BEARING THE "E", "F", "G" or "H" LABEL

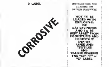
LABEL C^1


C1 LABEL
POISON
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
TO BE KEPT APART FROM FOODSTUFFS AND FOODSTUFF EMPTIES

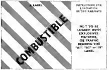
LABEL C^2


C2 LABEL
POISON
NOT TO BE LOADED WITH FOODSTUFFS OR FOODSTUFF EMPTIES AND TO BE KEPT APART FROM TRAFFIC BEARING THE "D" LABEL

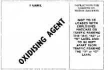
LABEL D


D LABEL
CORROSIVE
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES OR GAS CYLINDERS AND TO BE KEPT APART FROM FOODSTUFFS AND FOODSTUFF EMPTIES PAPER AND TEXTILES AND TRAFFIC BEARING THE "C2" "F" or "G" LABEL

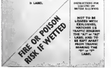
LABEL E


E LABEL
COMBUSTIBLE
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES MATCHES, OR TRAFFIC BEARING THE "A1" "A2" or "H" LABEL

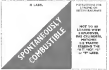
LABEL F


F LABEL
OXIDISING AGENT
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES MATCHES OR TRAFFIC BEARING THE "A1", "A2" or "H" LABEL AND TO BE KEPT APART FROM TRAFFIC BEARING THE "D" or "G" LABEL

LABEL G


G LABEL
FIRE OR POISON RISK IF WETTED
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES, MATCHES OR TRAFFIC BEARING THE "A1" or "A2" LABEL AND TO BE KEPT APART FROM TRAFFIC BEARING THE "D" or "F" LABEL

LABEL H


H LABEL
SPONTANEOUSLY COMBUSTIBLE
INSTRUCTIONS FOR LOADING ON BRITISH RAILWAYS
NOT TO BE LOADED WITH EXPLOSIVES, GAS CYLINDERS, MATCHES OR TRAFFIC BEARING THE "A1" "A2" "E" or "F" LABEL